ENVIRONMENTAL PROTECTION AGENCY
TECHNICAL ENFORCEMENT SUPPORT
AT
HAZARDOUS WASTE SITES

TES X

CONTRACT NO. 68-W9-0007
WORK ASSIGNMENT NO. R07005

FINAL

RCRA COMPLIANCE EVALUATION INSPECTION REPORT

COLLIS, INC.
1823 7TH AVENUE
CAMANCHE, IOWA
ID NO. IAD981710007

Inspected: September 6, 1989

PERFORMED BY:

METCALF & EDDY, INC.
2800 ROCKCREEK PARKWAY SUITE 700
KANSAS CITY, MISSOURI 64117
PROJECT NO. 170005

U.S. EPA REGION VII
WASTE MANAGEMENT DIVISION
RCRA BRANCH

January 2, 1990

TABLE OF CONTENT

Attachments

1.0 INTRODUCTION

On September 6, 1989, a RCRA Compliance Evaluation Inspection (CEI) was performed by Metcalf & Eddy, Inc. (M&E), personnel at Collis, Inc., 1823 7th Avenue, Camanche, Iowa under the Technical Enforcement Support (TES X) contract, Work Assignment No. R07005, for the U.S. Environmental Protection Agency (EPA), Region VII. This inspection was conducted under the authority of Section 3007 of the Resource Conservation and Recovery Act (RCRA) as amended. This narrative report and attachments present the results of the inspection.

This report contains a discussion of the facility's RCRA background, a summary of the facility's reported waste management practices, observations made during the investigation, and document review findings. The investigation report is supplemented with the following items: Letters of Introduction, CBI Forms, Receipt for Documents, Supporting Documentation and Photographs. These items are referenced in the report as Attachments 1 through 5.

2.0 PARTICIPANTS

The inspection of the Collis facility's waste management procedures was conducted by the following persons:

Collis, Inc.
Keith Shaw, Production Foreman

Metcalf & Eddy, Inc.
James Myers, Environmental Scientist
John Bryan, Civil Engineer

3.0 INSPECTION PROCEDURES

Upon arrival at the Collis facility, the inspectors met with Mr. Shaw and presented him with the letters of introduction (Attachment 1). The inspection's purpose and procedures were explained to Mr. Shaw and the confidentiality of business information was discussed. After the discussion, Mr. Shaw stated that he would like the Plant Manager, Paul Gassman, to review the material taken by the inspectors before signing the RCRA Inspection Confidentiality form (Attachment 2). Mr. Gassman was out of the office on the day of the inspection and could not be reached. The inspectors gave Mr. Shaw a receipt of the forms and instructed him to notify Mr. David A. Wagoner of the U.S. EPA within seven days of the inspection if any confidentiality claims were to be made.

The inspection consisted of discussions of the operations at Collis, the wastes generated, the waste management practices, a review of pertinent documents, and a tour of the manufacturing and waste management facilities. Mr. Shaw supplied information and conducted the facility tour. After the tour, the inspectors held an exit interview with Mr. Shaw. At the conclusion of the exit interview, Mr. Shaw acknowledged providing copies of pertinent documents to the inspectors by signing a Receipt for Documents (Attachment 3).

4.0 FACILITY DESCRIPTION

Collis, Inc. began operating at this facility in 1980. The facility runs three shifts a day, five days a week, and employs 90 people to manufacture metal tool holders. The tool holders are used in industrial machinery. The facility consists of a large building with office space in the

front, a machine shop in the middle, and a warehouse in the rear. Additional office space is located on a second story above the warehouse.

4.1 Processes

The manufacturing of metal tool holders involves heating, cutting, and grinding metal into proper shapes and then treating the tool holders with rust inhibitors. The process starts by heating metal in a forge and shaping it. After being cooled in quenching oil, the tool holders are cut and ground in the machine shop to their specified dimensions. Once the manufacturing process has been completed, the tool holders are treated with black oxide (nickel pentrate) and a rust inhibitor.

The black oxide treatment is performed in nine, 100-gallon tanks (Attachment 5, Photo 1). These nine tanks line the east side of a room located in the southwest corner of the machine shop. The parts are held in hanging baskets which are moved from tank to tank by an overhead conveyor system. The nine step treatment begins by lowering a basket loaded with tool holders into a tank containing caustic soda. The caustic soda is used to clean the tool holders of dust and metal particles. The loaded basket then is dipped into a rinse-water tank. After rinsing, the basket is lowered into a tank containing muriatic (hydrochloric) acid. The muriatic acid is used as a cleanser also. The acid tank is followed by two rinse water tanks and then the tank containing the nickel pentrate (Attachment 5, Photo 2). The nickel pentrate oxidizes the tool holders and turns them black. After being dipped into two additional water rinse tanks, the tool holders are lowered into a tank containing a mixture of lab oil and water. This mixture serves as a rust inhibitor. After soaking in the lab oil, the tool holders are placed in a bucket containing a solution called rust-ex (Attachment 5, Photo 3) for further protection against rust. Material safety data (MSD) sheets for these solutions are included in Attachment 4.

The tanks are separated from the wall by a basin (Attachment 5, Photo 4) which catches rinse water overflow and drains it to the city sewer system. Mr. Shaw said that the tanks containing caustic soda, muriatic acid, nickel pentrate, and lab oil are kept at a level low enough to prevent overflow into the basin.

The machines that are used to cut and grind the tool holders must be cleaned periodically to remove spent coolant, oil, and metal particles. There are thirty machines in the shop that must be cleaned. One man performs this job at a rate of about two machines a week. The cleaning is performed by flushing the machines with water and detergent. The spent coolant is forced out of the machine by the flush and pumped into the sewer. The used oil and water from the flush are collected in 55-gallon drums. The coolant has no hazardous constituents and is pumped into the same sewer as the rinse water.

4.2 RCRA Status

Collis filed a Notification of Hazardous Waste Activity with the U.S. EPA on January 20, 1987 (Attachment 4). This notification stated that Collis was a small quantity generator of D001 ignitable waste at this facility. However, according to the MSD sheets (Attachment 4), none of the constituents of the materials used by Collis are ignitable.

5.0 FINDINGS AND OBSERVATIONS

The Collis facility generates six waste streams. These waste streams include nickel pentrate sludge, waste caustic soda, waste muriatic acid, waste oil, waste metal shavings and grindings, and general refuse.

5.1 Waste Streams

The following are brief descriptions of how the waste streams at the Collis facility are generated, stored, and disposed:

- Nickel Pentrate Sludge

Nickel pentrate sludge is generated from the black oxide treatment process. As the nickel pentrate ages in the tank, it forms a sludge that floats on the surface. This sludge is skimmed off the surface and accumulated in a 55-gallon drum (Attachment 5, Photo 5) located about ten feet from the tank. The drum is not labeled or marked with an accumulation date. A metal grate provides the only cover for the drum. Mr. Shaw stated that about 30 gallons of this waste are generated every month. The sludge is transported in the 55-gallon drum by Collis personnel to another Collis facility on 2005 South 19th Street in Clinton, Iowa, for treatment. Mr. Shaw contacted an employee by telephone who was involved in the treatment at the Clinton facility and asked him to explain the treatment process to the inspectors. According to the employee, the sludge is brought to the Clinton facility with a pH of well over 12. Hydrochloric acid is added to the sludge to neutralize it down to a pH of 8.5. The sludge then is released to a settling basin. The solids are sent to a filter press where they are filtered with pressure and water. The effluent from this process is discharged into a nearby creek. Collis has a NPDES permit, Permit No. 5-23-26-1-00, to discharge into the creek.

- Waste Caustic Soda, Waste Muriatic Acid, and Used Oil

Waste caustic soda and waste muriatic acid are generated when the tanks containing these materials are cleaned. The old material is pumped from these tanks once every three months and is replaced by new caustic soda and muriatic acid. The old material is contained in 55-gallon drums.

Used oil is generated when the cutting and grinding machines are cleaned and when the lab oil tank is pumped out. The used oil is contained in 55-gallon drums also.

The 55-gallon drums containing waste caustic soda and waste muriatic acid are stored outside the rear of the building (Attachment 5, Photos 6 and 7). The drums are not labeled or marked with accumulation dates. The drums are collected once a month by Safety-Kleen for recycling. Safety-Kleen categorizes all of these wastes as oily water. According to Mr. Shaw, approximately 275 gallons of oily water is collected every month.

- Metal Shavings and Grindings

Metal shavings and grindings are generated from the manufacturing of the tool holders. The shavings and grindings from the machinery are collected in hoppers (Attachment 5, Photos 8,9). Full hoppers are emptied in a dumpster which is located outside the rear of the building (Attachment 5, Photo 11). Metal particles collected during the cleaning of the machines also are placed in the dumpster. The metal is collected by Turner Iron and Metal, 241 3rd Avenue North, Clinton, Iowa for resale.

- General Refuse

Waste paper and plastics are generated from the everyday activities at the facility. This waste is collected by Dale Nichol's Trucking, P.O. Box 485, Clinton, and is hauled to the county landfill. Empty 55-gallon drums are hauled off-site by R.V. Hopkins, Inc.,743 Schmidt Road, Davenport, Iowa.

5.2 Record Keeping

According to Mr. Shaw, the Collis facility in Camanche does not consider itself a generator of hazardous waste. Therefore, records of shipments of wastes are kept for billing and payment purposes only. Copies of bills of lading for the most recent shipments of oily water and empty 55-gallon drums were obtained by M&E personnel during the inspection and are included in Attachment 4. Mr. Shaw indicated that no records are kept for the shipment of the nickel pentrate sludge because the waste is shipped to another Collis facility.

5.3 Visual Observations

A visual inspection of the Collis facility was conducted by M&E personnel who were guided by Mr. Shaw. No waste streams other than those already identified were observed.

At the time of the inspection, 14 55-gallon drums of used oil were stored on wooden pallets along the outside wall of the rear of the building. There were a total of 33 drums in the storage area but 19 of these were empty. The empty drums had their lids in place to avoid accumulating rain water. The 55-gallon drum containing nickel pentrate sludge was stored in the treatment room and was covered with a ventilated lid (Attachment 5, Photo 5). The drum was not marked with a label that indicated its contents.

6.0 CONCLUSIONS

Collis does not classify any of the wastes generated at this facility as hazardous and, therefore, does not handle any of its wastes according to the regulations in 40 CFR Parts 124, 170, and 260 through 268. The information gathered during this inspection, however, indicates that Collis is a generator of D002 corrosive waste. The nickle pentrate sludge that is taken to the facility in Clinton for treatment is reported to have a pH greater than 12. If the pH is consistently over 12.5, the waste would meet the characteristics of corrosivity specified in 40 CRF Part 261.22 and should be classified as a D002 hazardous waste. This would make the facility in Camanache a small quantity generator and a transporter of hazardous waste. A waste analysis will have to be performed on the sludge before an accurate determination of the waste's corrosivity can be made.

John E. Bryan
Civil Engineer

Marsha K. Bates
Contractor Project Manager

ATTACHMENT 1
LETTERS OF INTRODUCTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

JUL 0 6 1989

RCRA Compliance Evaluation Inspections
Credentials and Designation

To Whom It May Concern:

This certifies that John Edward Bryan, whose signature appears below, is designated an authorized contractor of the U.S. Environmental Protection Agency for the purpose of conducting RCRA Compliance Evaluation Inspection (CEI) for the period July 10, 1989 through September 30, 1989. This person is hereby authorized to conduct these official investigations pursuant to Section 3007 of the Resource Conservation and Recovery Act (RCRA).

Section 3007(b) of RCRA and 40 CFR Part 2 define the Agency's policies regarding protection of trade secrets and confidential information.

Age:	23
Height:	6'1"
Weight:	175
Color of Hair:	Brown
Color of Eyes:	Hazel

John Edward Bryan
Designated Contractor

Robert L. Morby
Chief, RCRA Section
Waste Management Division
U.S. Environmental Protection
Agency-Region VII

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VII
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

JUL 06 1989

RCRA Compliance Evaluation Inspections
Credentials and Designation

To Whom It May Concern:

This certifies that James A. Myers, whose signature appears below, is designated an authorized contractor of the U.S. Environmental Protection Agency for the purpose of conducting RCRA Compliance Evaluation Inspection (CEI) for the period July 10, 1989 through September 30, 1989. This person is hereby authorized to conduct these official investigations pursuant to Section 3007 of the Resource Conservation and Recovery Act (RCRA).

Section 3007(b) of RCRA and 40 CFR Part 2 define the Agency's policies regarding protection of trade secrets and confidential information.

Age:	27
Height:	5'9"
Weight:	185
Color of Hair:	Brown
Color of Eyes:	Brown

James A. Myers
Designated Contractor

Robert L. Morby
Chief, RCRA Section
Waste Management Division
U.S. Environmental Protection
Agency-Region VII

ATTACHMENT 2
CBI FORMS

U.S. ENVIRONMENTAL PROTECTION AGENCY
RCRA INSPECTION
CONFIDENTIALITY NOTICE

Name and Address of Inspector(s)	Name and Address of Facility	
James A. Myers John Bryan ~~U.S. EPA, Region VII~~ ~~ENSV Division~~ ~~25 Funston Road~~ ~~Kansas City, Kansas 66115~~ 2800 Rockcreek Parkway North Kansas City, MO. 64117	Collis, Inc. Central Steel Road Camanche IA 52730 Owner, Operator, or Agent in Charge Paul Gassman Title Plant Manager Address Central Steel Rd. Camanche IA. 52730	
Name of Individual to Whom Notice Given	Title	Date
Keith Shaw	Production Foreman	9/6/89

It is possible that EPA will receive public requests for release of the information obtained during inspection of the facility above. Such requests will be handled by EPA in accordance with provisions of the Freedom of Information Act (FDIA), 5 U.S.C. 552; EPA regulations issued thereunder, 40 CFR Part 2; and the Resource Conservation and Recovery Act, Section 3007, as amended. EPA is required to make inspection data available in response to FOIA requests, unless the Administrator of the Agency determines that the data contains information entitled to confidential treatment.

Any or all of the information collected by EPA during the inspection may be claimed confidential, if it relates to trade secrets or commercial of financial matters that you consider to be confidential. If you make claims of confidentiality, EPA will disclose the information only to the extent, and by the means of the procedures set forth in the regulations (cited above) governing EPA's treatment of confidential information. Among other things, the regulations require that the EPA notify you in advance of publicly disclosing any information you have claimed and certified confidential.

To claim information confidential, you must certify that each claimed item meets <u>all</u> of the following criteria:

1. Your company has taken measures to protect the confidentiality of the information, and it intends to continue to take such measures.

2. The information is not, and has not been, reasonably obtainable without your company's consent by other persons (other than governmental bodies) by use of legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding).

3. The information is not publicly available elsewhere.

4. Disclosure of the information would cause substantial harm to your company's competitive position.

At the completion of the inspection, you will be given a receipt for all documents, samples, and other materials collected. At that time you may make claims that some or all of the information is confidential and meets the four criteria listed above.

RCRA INSPECTION CONFIDENTIALITY NOTICE	Facility

If you are not authorized by your company to make confidentiality claims, this notice will be sent by certified mail, along with the receipt for documents, samples, and other materials, to the Owner, Operator, or Agent in Charge of your firm, within two days of this date. That person must return a statement, specifying any information which should receive confidential treatment.

This statement from the Owner, Operator, or Agent in Charge should be addressed to:

Mr. David A. Wagoner
Director, Waste Management Division
United States Environmental Protection Agency
726 Minnesota Avenue
Kansas City, Kansas 66101

and mailed by registered, return-receipt requested mail with in seven (7) calendar days of receipt of this Notice.

Failure by your firm to submit a written request that information be treated as confidential, either at the completion of the inspection or by the Owner, Operator, or Agent in charge, within the seven-day period, will be treated by the EPA as a waiver by your company of any claims for confidentiality regarding the inspection data.

To be completed by the facility official receiving this Notice:

I have received and read this Notice.

Name Keith M. Shaw

Title Production Foreman

Signature Keith M. Shaw

Date 9/6/89

If there is no one on the premises of the facility who is authorized to make business confidentiality claims for the firm, a copy of this Notice and other inspection materials will be sent to the Owner, Operator, or Agent in charge of the company. If there is another company official who should also receive this information, please designate below:

Name PAUL GASSMAN

Title GENERAL MANAGER

Address CENTRAL Steel Rd.
CAMANCHE, Ia. 52730

U.S. ENVIRONMENTAL PROTECTION AGENCY
726 MINNESOTA AVENUE
KANSAS CITY, KANSAS 66101

REQUEST FOR CONFIDENTIAL
TREATMENT

Name of Individual	Title Date
Firm Name	Firm Address

Information for which Confidential Treatment is requested:

Acknowledgement of Claimant

The undersigned requests that confidential treatment of the information described be provided in accordance with provisions of the Freedom of Information Act (FOIA), 5U.S.C.552; EPA regulations issued thereunder, 40 CFR Part 2; and the Resource Conservation and Recovery Act (RCRA), Section 3007, as amended. The undersigned further acknowledges that he/she is authorized to make such claims for his/her firm.

The undersigned also certifies that each item described above meets all of the following criteria: (1) The company has taken measures to protect the confidentiality of the information, and it intends to continue to take such measures: (2) The information is not, and has not been, reasonably attainable without the company's consent by other persons (other than governmental bodies) by use of legitimate means (other than discovery based on a showing of special need in a judicial of quasi-judicial proceeding; (3) The information is not publicly available elsewhere; and (4) Disclosure of the information would cause substantial harm to the company's competitive position.

Signature (Owner, Operator, or Agent)	Title
Name of Inspector Title	Inspector's Signature

ATTACHMENT 3
RECEIPT FOR DOCUMENTS

U.S. ENVIRONMENTAL PROTECTION AGENCY

RECEIPT FOR SAMPLES AND DOCUMENTS

Inspector(s) Name and Address	Firm Name and Address
John Bryan Jim Myers Metcalf & Eddy 2800 Rockcreek Pkwy Suite 700 N Kansas City, MO 64117 U.S. EPA, Region VII ENSV Division 25 Funston Road Kansas City, Kansas 66115	Collis Inc Central Steel Road Comanche, IA 52730 Name of Individual Keith Shaw Title Production Foreman
~~Date Collected~~ / ~~Samples were:~~ ( ) Purchased	( ) Received no charge ( ) ~~Borrowed~~
~~Sample Numbers~~	~~Amount paid for Samples~~
~~Duplicate Samples Requested~~ ( ) Yes ( ) No	~~Method of Payment~~ ( ) Cash ( ) Voucher ( ) To be Billed

The documents and samples of chemical substances and/or mixtures described below were collected in connection with the administration and enforcement of the Resource Conservation and Recovery Act.

Receipt for the document(s) ~~and/or Sample(s)~~ described below is hereby acknowledged:

Bill of Lading from Safety-Kleen 7-7-89
3-15-89
Bill of Lading from R.V. Hopkins 4-28-89
MSDS for Hydrogen Chloride 9-9-88

Lab Oil
Nickel Pentrate
Petroleum Hydrocarbon ⇒ Cut-Rite 300

Rustex 105
The Cover
The Cutter
The Grinder
The Cleaner

Signature (Owner, Operator, or Agent	Title
Keith M. Shaw	9/6/89
Name of Inspector **Title**	**Inspector's Signature**
JAMES MYERS Environmental Scientist	James A. Myers

ATTACHMENT 4
SUPPORTING DOCUMENTATION

Print or type with ELITE type (12 characters per inch) in the unshaded areas only

Form Approved. OMB No. 2050-0028. Expires 9-30-88.
GSA No. 0246-EPA-OT

United States Environmental Protection Agency
Washington, DC 20460

EPA Notification of Hazardous Waste Activity

Please refer to the *Instructions for Filing Notification* before completing this form. The information requested here is required by law (*Section 3010 of the Resource Conservation and Recovery Act*).

For Official Use Only

Comments

Installation's EPA ID Number	Approved	Date Received (yr. mo. day)	
C F IAD981710007 T/A C 1		870202	045 Clinton

I. Name of Installation

Collis Inc

II. Installation Mailing Address

Street or P.O. Box: 2005 S. 19th St

City or Town	State	ZIP Code
Clinton	Ia	52732

III. Location of Installation

Street or Route Number: 1823 7th Ave

City or Town	State	ZIP Code
Camanche	Ia	52730

IV. Installation Contact

Name and Title (last, first, and job title)	Phone Number (area code and number)
Rose Lawrence	319 242 7731

V. Ownership

A. Name of Installation's Legal Owner	B. Type of Ownership (enter code)
COLLIS INC	Corporation (P)

VI. Type of Regulated Waste Activity (*Mark 'X' in the appropriate boxes. Refer to instructions.*)

A. Hazardous Waste Activity

- [X] 1a. Generator
- [X] 1b. Less than 1,000 kg/mo.
- [ ] 2. Transporter
- [ ] 3. Treater/Storer/Disposer
- [ ] 4. Underground Injection
- [ ] 5. Market or Burn Hazardous Waste Fuel (*enter 'X' and mark appropriate boxes below*)
  - [ ] a. Generator Marketing to Burner
  - [ ] b. Other Marketer
  - [ ] c. Burner

B. Used Oil Fuel Activities

- [ ] 6. Off-Specification Used Oil Fuel (*enter 'X' and mark appropriate boxes below*)
  - [ ] a. Generator Marketing to Burner
  - [ ] b. Other Marketer
  - [ ] c. Burner
- [ ] 7. Specification Used Oil Fuel Marketer (*or On site Burner*) Who First Claims the Oil Meets the Specification

VII. Waste Fuel Burning: Type of Combustion Device (*enter 'X' in all appropriate boxes to indicate type of combustion device(s) in which hazardous waste fuel or off-specification used oil fuel is burned. See instructions for definitions of combustion devices.*)

- [ ] A. Utility Boiler
- [ ] B. Industrial Boiler
- [ ] C. Industrial Furnace

VIII. Mode of Transportation (*transporters only — enter 'X' in the appropriate box(es)*)

- [ ] A. Air
- [ ] B. Rail
- [ ] C. Highway
- [ ] D. Water
- [ ] E. Other (*specify*)

IX. First or Subsequent Notification

Mark 'X' in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA ID Number in the space provided below.

- [X] A. First Notification
- [ ] B. Subsequent Notification (*complete item C*)

C. Installation's EPA ID Number

ID — For Official Use Only

														T/A	C
C W															1

X. Description of Hazardous Wastes *(continued from front)*

A. Hazardous Wastes from Nonspecific Sources. Enter the four-digit number from 40 *CFR* Part 261.31 for each listed hazardous waste from nonspecific sources your installation handles. Use additional sheets if necessary.

1	2	3	4	5	6
D001					
7	**8**	**9**	**10**	**11**	**12**

B. Hazardous Wastes from Specific Sources. Enter the four-digit number from 40 *CFR* Part 261.32 for each listed hazardous waste from specific sources your installation handles. Use additional sheets if necessary.

13	14	15	16	17	18
19	**20**	**21**	**22**	**23**	**24**
25	**26**	**27**	**28**	**29**	**30**

C. Commercial Chemical Product Hazardous Wastes. Enter the four-digit number from 40 *CFR* Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

31	32	33	34	35	36
37	**38**	**39**	**40**	**41**	**42**
43	**44**	**45**	**46**	**47**	**48**

D. Listed Infectious Wastes. Enter the four-digit number from 40 *CFR* Part 261.34 for each hazardous waste from hospitals, veterinary hospitals, or medical and research laboratories your installation handles. Use additional sheets if necessary.

49	50	51	52	53	54

E. Characteristics of Nonlisted Hazardous Wastes. Mark 'X' in the boxes corresponding to the characteristics of nonlisted hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 — 261.24)*

- [X] 1. Ignitable *(D001)*
- [ ] 2. Corrosive *(D002)*
- [ ] 3. Reactive *(D003)*
- [X] 4. Toxic *(D000)*

XI. Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Signature	Name and Official Title *(type or print)*	Date Signed
Lawrence A. Rose	Lawrence A. Rose Operations Manager	Jan. 20, 1987

EPA Form 8700-12 (Rev. 11-85) Reverse

SEP 06 '89 11:22 COLLIS INC.

SAFETY-KLEEN OIL SERVICES

PO BOX 427 • BUFFALO, NEW YORK, 14205

(716) 855-2311

DUNS NO. 09-933-7529

FED. ID NO. 98-0082130

MANUAL OP. 1/1 FORM

B 29818

MANIFEST NUMBER

GENERATOR

5-047-77-

CUSTOMER NUMBER

Collis Co.

NAME

Central Steel Rd.

ADDRESS

Anamosa, IA 52730

CITY/STATE ZIP

BILL TO

5-047-77-1496-5

CUSTOMER NUMBER

Collis Co.

NAME

2005 S 19th St.

ADDRESS

Clinton, IA 52732

CITY/STATE ZIP

SERVICE DATE	SALESMAN'S NO.	CUSTOMER P.O. NUMBER	SALES TAX EXEMPTION NO.	NEXT SERVICE				
7/7/89	0285	10-031771						

SERVICE SECTION

SERVICE NUMBER	DESCRIPTION	GROSS QUANTITY	NET QUANTITY	UNIT OF MEASURE	PRICE	SERVICE CHARGE	TAX	LINE TOTAL
040	USED OIL PICK UP							
050	OILY WATER DISPOSAL	300		G	.45	$85.00	2.50	608.50
060	INTERCEPTOR SERVICE							
10050	DEMURRAGE							
10051	DUMPING TIME							
10052	MILEAGE							
10053								
10054								

USE TAX RECORDED

D. Bockler
7-7-89

TOTAL			608.50

PAYMENT RECEIVED SECTION

CASH ☐	CHECK NUMBER	TOTAL RECEIVED

APPLY TO TODAY'S SERVICE

AMOUNT $ _____

APPLY TO PREVIOUS BALANCE:

INV # _____

AMOUNT $ _____

PAYMENT MADE SECTION

PAYMENT METHOD	PAYMENT AMOUNT
☐ CASH ☐ CHECK	

RECEIVED BY

CUSTOMER X

CHARGE MY ACCOUNT FOR THIS TRANSACTION UNLESS OTHERWISE INDICATED IN THE PAYMENT RECEIVED SECTION.

$ 608.50

Ken Knight

CUSTOMER'S SIGNATURE

INVOICES REFLECTING CHARGES TO CUSTOMER ARE SUBJECT TO AN INTEREST CHARGE OF THE LESSER OF 1½ % PER MONTH (18% PER ANNUM) OR THE MAXIMUM RATE ALLOWED BY LAW ON ANY UNPAID INVOICES THAT ARE NOT PAID WITHIN 30 DAYS.
IN THE EVENT OF DEFAULT, SAFETY-KLEEN SHALL BE ENTITLED TO RECOVER COSTS OF COLLECTION, INCLUDING REASONABLE ATTORNEY'S FEES.

safety-kleen oil services inc.
PO BOX 427 • BUFFALO, NEW YORK, 14205

DUNS NO. 09 - 933 - 7529
FED. ID NO. 98 - 0082130

PLACEMENT FORM

A47489

Recurve in Under Marco

GENERATOR/LOCATION

NAME: OLLIS INCORPERATED
INFORMATION / ATTENTION LINE: 2005 SOUTH 19TH STREET
DELIVERY ADDRESS:
CITY: ~~[illegible]~~ CLINTON STATE: IA
ZIP: 52732 TAX CODE:
USA EPA ID NO: STATE ID NO.:

BILL TO (IF DIFFERENT FROM LOCATION)

NAME:
INFORMATION / ATTENTION LINE:
DELIVERY ADDRESS:
CITY: STATE:
ZIP: - TAX CODE:
MANIFEST NUMBER:

SERVICE SIGN-UP

SIGN-UP DATE	SALESMAN'S NO.	BUSINESS TYPE	TANK CAPACITY	TERRITORY	CUSTOMER TELEPHONE NO.	SALES TAX EXEMPTION NO.	CUSTOMER P.O. NUMBER
3/15/89	C785	09	BLS	C385	319-242-7731		# 10-03171

CHAIN	SVC-P/S	PROD. P/S	HANDLING CODE	CREDIT CODE	NEXT SVC	FEDERAL ID NO.	COMMENTS

FOR OFFICE USE ONLY

SERVICE SECTION

SERVICE NUMBER	DESCRIPTION	GROSS QUANTITY	NET QUANTITY	UNIT OF MEASURE	PRICE	SERVICE CHARGE	TAX	LINE TOTAL
040	USED OIL PICK UP			G				
050	OILY WATER DISPOSAL	1150		G.	.35	402 50	16 10	418 60
060	INTERCEPTOR SERVICE							
10050	DEMURRAGE							
10051	PUMPING TIME							
10052	MILEAGE							
10053								
10054								
	TOTAL							418 60

PAYMENT RECEIVED SECTION

CASH ☐	TOTAL RECEIVED
CHECK NUMBER	

PAYMENT MADE SECTION

PAYMENT METHOD	PAYMENT AMOUNT
☐ CASH ☐ CHECK	

RECEIVED BY:

CUSTOMER'S SIGNATURE

CHARGE MY ACCOUNT FOR THIS TRANSACTION UNLESS OTHERWISE INDICATED IN THE PAYMENT RECEIVED SECTION.

AMOUNT DUE $ 418 60

X [signature]
CUSTOMER'S SIGNATURE

INVOICES REFLECTING CHARGES TO CUSTOMER ARE SUBJECT TO AN INTEREST CHARGE OF THE LESSER OF 1½ % PER MONTH (18% PER ANNUM) OR THE MAXIMUM RATE ALLOWED BY LAW ON ANY UNPAID INVOICES THAT ARE NOT PAID WITHIN 30 DAYS.
IN THE EVENT OF DEFAULT, SAFETY-KLEEN SHALL BE ENTITLED TO RECOVER COSTS OF COLLECTION, INCLUDING REASONABLE ATTORNEY'S FEES.

PART NO. 1419 (10/88)

CUSTOMER'S COPY

R.V. Hopkins Inc.

MAILING ADDRESS: P.O. Box 3217
Davenport, IA
52808

PLANT LOCATION: 743 Schmidt Road
Davenport, IA

(319) 323-5419

. . SERVING YOU SINCE 1951. . .

EMPTY DRUM CERTIFICATION

I hereby certify that these drums are "empty" as that term is defined in the national Environmental Protection Agency regulations, 40 CFR 261.7*, and that they have been properly prepared for transportation under the regulations of the U.S. Department of Transportation, 49 CFR 173.29.**

42 Junk
oil Drums

Date: 9-9-88 Collis

58 good
1 Drums

*With regard to most regulated residues, EPA's 40 CFR 261.7 says: "A container . . . is empty if:

(i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating, and

(ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container. . . ."

EPA has explained this rule, saying that "one inch of waste material is an overriding constraint and may remain in an empty container only if it cannot be removed by normal means. The rationale for this provision is that there are certain tars and other extremely viscous materials that will remain in the container even after the container is emptied by normal means."

For residues of products specifically listed by name in 40 CFR 261.33(e), EPA says the container is empty only "if the container . . . has been triple-rinsed using a solvent capable of removing" the product, or has been cleaned by another method shown to achieve equivalent removal.

**DOT's 49 CFR 173.29 says that all openings on the empty container must be closed, and that all markings and labels must be in place as if the drum were full of its original contents. A DOT shipping paper is not required for transportation of a drum for reconditioning via contract or private motor carrier. DOT placarding is not required for vehicles carrying empty containers.

R.V. Hopkins Inc.

MAILING ADDRESS: P.O. Box 3217
Davenport, IA
52808

PLANT LOCATION: 743 Schmidt Road
Davenport, IA

(319) 323-5419

.. SERVING YOU SINCE 1951 ..

16 & 55 gal. Steel drums

EMPTY DRUM CERTIFICATION

16 ea

I hereby certify that these drums are "empty" as that term is defined in the National Environmental Protection Agency regulations, 40 CFR 261.7*, and that they have been properly prepared for transportation under the regulations of the U.S. Department of Transportation, 49 CFR 173.29.**

Date: 4-13-89 Collis Toolholder

Dale Boetcher

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PJ 4/28/89

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Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As Used on Label and List)*
Nickel Pentrate L

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name
Heatbath Corporation

Address *(Number, Street, City, State, and ZIP Code)*
107 Front Street
Indian Orchard, MA 01151

EMERGENCY DIRECTORY ASSISTANCE (313) 644-5626

Telephone Number for Information
413-543-3381

Date Prepared
May 15, 1986

Signature of Preparer *(optional)*
Thomas A. Nadeau

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity)	CAS #	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Sodium Hydroxide	1310-73-2	2.0 mg/m^3	2.0 mg/m^3		< 80
Sodium Nitrate	7631-99-4	Not Established	Not Established		< 10
Sodium Nitrite	7632-00-0	"	"		< 10

Section III — Physical/Chemical Characteristics

Boiling Point	> 250°F.	Specific Gravity (H_2O = 1)	1.528
Vapor Pressure (mm Hg)	N/A	Melting Point	N/A
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A

Solubility in Water
Complete

Appearance and Odor
Light green liquid. No odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
None	N/A	N/A	N/A

Extinguishing Media
Water

Special Fire Fighting Procedures
Use protective equipment. Treat as Sodium Hydroxide.

Unusual Fire and Explosion Hazards
A strong oxidizing agent. May react with some metals, i.e., aluminum, tin and zinc to evolve hydrogen gas.

Section V — Reactivity Data

Stability			Conditions to Avoid
NPL	Unstable		Overheating in excess of 1000°F.
	Stable	X	

Incompatibility (*Materials to Avoid*)
Organic materials, cyanides, strong acids, aluminum, zinc, tin

Hazardous Decomposition or Byproducts
Steam, nitrogen oxides, hydrogen gas

Hazardous Polymerization			Conditions to Avoid
	May Occur		
	Will Not Occur	X	N/A

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? Yes | Skin? No | Ingestion? Yes

Health Hazards (*Acute and Chronic*)
May be harmful if swallowed. May be irritating to eyes, skin and mucous membranes.

Carcinogenicity: None | NTP? No | IARC Monographs? No | OSHA Regulated? No

Signs and Symptoms of Exposure
Eyes, skin and throat may become irritated. Prolonged contact can result in severe burns with scarring.

Medical Conditions Generally Aggravated by Exposure: Not known.

Emergency and First Aid Procedures
Skin - Wash with plenty of water. Remove contaminated clothing. See a physician if severe. Eyes - Flush with plenty of water, at least 15 min. Get medical attention. Ingestion - If conscious, give plenty of water or fruit juice. Do NOT induce vomiting. Get immediate medical attention.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled
Absorb solution into solid type mineral absorbent; i.e. "Speedi-Dry". Sweep up powder and dispose with alkaline waste. Wash area with water.

Waste Disposal Method
Neutralize and dispose in accordance with Federal, State and Local regulations.

Precautions to Be Taken in Handling and Storing
Avoid contact with eyes, skin or clothing. Store in a cool, dry place away from strong acids.

Other Precautions
Containers of this product may be hazardous when empty. When mixing with water, add slowly with constant stirring. Do not add to hot water.

Section VIII — Control Measures

Respiratory Protection (*Specify Type*)
Use NIOSH/MSHA approved respirator if dust, mist or vapors are excessive.

Ventilation		
	Local Exhaust: Not sufficient for black oxide bath	Special: None
	Mechanical (*General*): 200 CFM	Other: None

Protective Gloves: Rubber | Eye Protection: Face shield or safety goggles

Other Protective Clothing or Equipment
Rubber apron, boots, full cover work clothes.

Work/Hygienic Practices
Wash thoroughly after handling, launder clothes.

* USGPO: 1986-491-529/45775

V terial Safety Data Sheet
May be used to comply with
O HA's Hazard Communication Standard,
2 CFR 1910.1200. Standard must be
c..sulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

K ITITY (As Used on Label and List) *
LAB OIL 72-D

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

EMERGENCY DIRECTORY ASSISTANCE (313) 644-5626

M ufacturer's Name
I atbath Corporation

Telephone Number for Information
413-543-3381

A..ress (Number, Street, City, State, and ZIP Code)
107 Front Street
Indian Orchard, MA 01151

Date Prepared
NOVEMBER 3, 1986
DATE REVISED
SEPTEMBER 30, 1987

Signature of Preparer (optional)
THOMAS A. NADEAU

S ction II — Hazardous Ingredients/Identity Information

H ardous Components (Specific Chemical Identity)	CAS #	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
ETRAETHYLENE GLYCOL	112-60-7	NOT ESTABLISHED	NOT ESTABLISHED		<10
POLYGLYCOL 400	25322-68-3	NOT ESTABLISHED	NOT ESTABLISHED		<10
RIPROPYLENE GLYCOL	1638-16-0	NOT ESTABLISHED	NOT ESTABLISHED		<10
ALOX 575	NOT ESTABLISHED	NOT ESTABLISHED	NOT ESTABLISHED		<50
APTHENIC OIL	64742-76-3	NOT ESTABLISHED	NOT ESTABLISHED		<80
ORBITAN MONOOLEATE	1338-43-8	NOT ESTABLISHED	NOT ESTABLISHED		<10

NOTE: THE OSHA PEL AND ACGIH TLV FOR OIL MISTS IS 5.0 mg/m³

ction III — Physical/Chemical Characteristics

Boiling Point	> 600°F	Specific Gravity (H_2O = 1)	0.95
..or Pressure (mm Hg.)	NIL	Melting Point	N/A
..or Density (AIR = 1)	NIL	Evaporation Rate (Butyl Acetate = 1)	N/A

..ubility in Water
EMULSIFIES IN WATER.

..earance and Odor
REDDISH-BROWN FLUID. BLAND ODOR.

Section IV — Fire and Explosion Hazard Data

..sh Point (Method U...)	Flammable Limits	LEL	UEL
C.O.C. ABOVE 330°F	N/A	N/A	N/A

Extinguishing Media
WATER, CARBON DIOXIDE, FOAM OR DRY CHEMICAL.

..ecial Fire Fighting Procedures
WEAR PROTECTIVE CLOTHING WITH RESPIRATORY APPARATUS.

..usual Fire and Explosion Hazards
AVOID EXPOSURE TO VERY HIGH TEMPERATURE SOURCES SUCH AS OPEN FLAME, WELDING TORCHES ETC.

Section V — Reactivity Data

Stability			Conditions to Avoid
	Unstable		VERY HIGH TEMPERATURE SOURCES
	Stable	X	

Incompatibility (*Materials to Avoid*)
STRONG OXIDIZERS.

Hazardous Decomposition or Byproducts
CARBON DIOXIDE, CARBON MONOXIDE, VARIOUS HYDROCARBONS UNDER THERMAL DECOMPOSITION.

Hazardous Polymerization			Conditions to Avoid
	May Occur		
	Will Not Occur	X	N/A

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? YES Skin? YES Ingestion? YES

Health Hazards (*Acute and Chronic*)
MAY BE HARMFUL IF SWALLOWED. MAY BE IRRITATING TO EYES, SKIN AND MUCOUS MEMBRANES IN SOME INDIVIDUALS.

Carcinogenicity: NONE NTP? N/A IARC Monographs? N/A OSHA Regulated? N/A

Signs and Symptoms of Exposure
EYE, SKIN AND THROAT IRRITATION.

Medical Conditions
Generally Aggravated by Exposure NOT KNOWN.

Emergency and First Aid Procedures
SKIN-WASH WITH PLENTY OF WATER. REMOVE CONTAMINATED CLOTHING.
EYES-FLUSH WITH PLENTY OF WATER, AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.
INGESTION-IF CONSCIOUS, GIVE PLENTY OF WATER. INDUCE VOMITING ONLY ON THE ADVICE OF A PHYSICIAN GET MEDICAL ATTENTION.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled
ABSORB SOLUTION INTO SOLID TYPE ABSORBENT, i.e. "SPEEDI-DRY". SWEEP UP AND DISPOSE INTO A SUITABLE CONTAINER. WASH AREA WITH WATER.

Waste Disposal Method
CONTAINS 0.2% BARIUM. (THE BARIUM COMPOUND IS NOT WATER SOLUBLE).
DISPOSE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

Precautions to Be Taken in Handling and Storing
AVOID CONTACT WITH EYES, SKIN OR CLOTHING. DO NOT USE A CUTTING OR WELDING TORCH ON THIS CONTAINER.

Other Precautions
CONTAINERS OF THIS PRODUCT MAY BE HAZARDOUS WHEN EMPTY. TREAT ANY RESIDUE BEFORE DISCARDING.

Section VIII — Control Measures

Respiratory Protection (*Specify Type*)
USE NIOSH/MSHA APPROVED RESPIRATOR IF DUST, MISTS, OR VAPORS ARE EXCESSIVE.

Ventilation		
Local Exhaust	50 CFM	Special: NONE
Mechanical (*General*)	MAINTAIN BELOW PEL, TLV	Other: NONE

Protective Gloves: RUBBER
Eye Protection: FACE SHIELD OR SAFETY GOGGLES

Other Protective Clothing or Equipment
RUBBER APRON, BOOTS, FULL COVER WORK CLOTHES.

Work/Hygienic Practices
WASH THOROUGHLY AFTER HANDLING, LAUNDER CLOTHES.

* USGPO: 1988-491-529/45775

VIKING CHEMICAL COMPANY
1827-18th Ave.
P.O. BOX 1595
ROCKFORD, IL 61110.
(815) 397-0500

VSR-01

MATERIAL SAFETY DATA SHEET

June 3, 1986

A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME RUSTEX 105

CHEMICAL NAME PETROLEUM DISTILLATE WITH ADDITIVES

PRODUCT APPEARANCE AND ODOR
Red liquid - solvent odor

EMERGENCY TELEPHONE NUMBER CHEMTREC - 800-424-9300
VIKING CHEMICAL CO. - 815-397-0500

B. COMPONENTS AND HAZARD INFORMATION

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Mineral Spirits	100ppm	100ppm		

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS)

Health	Flammability	Reactivity	BASIS
1	2	0	

EXPOSURE LIMIT FOR TOTAL PRODUCT
100 ppm (590 mg/m3) for an 8-hour workday

BASIS
Recommended by the American Conference of Governmental Industrial Hygienists (ACGIH)

C. EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN CONTACT
In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INHALATION
If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

INGESTION
If ingested, DO NOT induce vomiting: call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM) 144°
ASTM D 56, Tag Closed Cup

AUTOIGNITION TEMPERATURE
Approximately 255°C (490°F)
ASTM D 2155

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health	Flammability	Reactivity	BASIS
1	2	0	Recommended by the National Fire Protection Association

HANDLING PRECAUTIONS
Keep product away from heat, sparks, pilot lights, static electricity, and open flame.

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)
Estimated values: Lower Flammable Limit 0.9% Upper Flammable Limit 7%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use dry chemical, foam or carbon dioxide. Water may be ineffective, but water should be used to keep fire-exposed containers cool. If a leak or spill has ignited, use water spray to disperse the vapors and to protect men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

NOTE: The inclusion of the phrase "water may be ineffective" is to indicate that although water can be used to cool and protect exposed material, water may not extinguish the fire unless used under favorable conditions by experienced fire fighters trained in fighting all types of flammable liquid fires.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
Fumes, smoke, carbon monoxide, aldehydes and other decomposition products, in the case of incomplete combustion.

"EMPTY" CONTAINER WARNING
"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)
High vapor concentrations (greater than approximately 1000 ppm) are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic, and may have ther central nervous system effects.

NATURE OF HAZARD AND TOXICITY INFORMATION
Prolonged or repeated skin contact with this product tends to remove skin oils possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant" by OSHA criteria.

Product contacting the eyes may cause eye irritation.

Reports of animal studies using both sexes of several species have shown that kidney damage can occur in male rats after prolonged and repeated inhalation exposures to light hydrocarbon vapors of the general type present in this product. While the damage is of a low order of severity in animals, the implications of these results for humans have not yet been determined.

Product has a low order of acute oral and dermal toxicity, but minute amounts aspirated into the lungs during ingestion may cause mild to severe pulmonary injury and possibly death.

This product is judged to have an acute oral LD50 (rat) greater than 5 g/kg of body weight, and an acute dermal LD50 (rabbit) greater than 3.16 g/kg of body weight.

F. PHYSICAL DATA

The following data are approximate or typical values and should not be used for precise design purposes.

BOILING RANGE
Approximately > 300°

SPECIFIC GRAVITY (15.6 C/15.6 C) 0.8772

pH
Essentially neutral

VAPOR PRESSURE
Less than 10 mm Hg @ 25°C
ASTM D 2879

VAPOR DENSITY (AIR = 1)
Approximately 5.0

PERCENT VOLATILE BY VOLUME
40 @ 1 atm. and 25°C (77°F)

EVAPORATION RATE @ 1 ATM. AND 25 C (77 F)
(n-BUTYL ACETATE = 1)
0.1

SOLUBILITY IN WATER @ 1 ATM. AND 25 C (77 F)
Negligible; less than 0.1%

G. REACTIVITY

This product is stable and will not react violently with water. Hazardous polymerization will not occur. Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite or calcium hypochlorite.

H. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Shut off and eliminate all ignition sources. Keep people away. Recover free product. Add sand, earth or other suitable absorbent to spill area. Minimize breathing vapors. Minimize skin contact. Ventilate confined spaces. Open all windows and doors. Keep product out of sewers and watercourses by diking or impounding. Advise authorities if product has entered or may enter

sewers, watercourses, or extensive land areas.
Assure conformity with applicable governmental regulations. Continue to observe precautions for volatile, combustible vapors from absorbed material.

I. PROTECTION AND PRECAUTIONS

VENTILATION
Use only with ventilation sufficient to prevent exceeding recommended exposure limit or buildup of explosive concentrations of vapor in air. Use explosion-proof equipment. No smoking or open lights.

RESPIRATORY PROTECTION
Use supplied-air respiratory protection in confined or enclosed spaces, if needed.

PROTECTIVE GLOVES
Use chemical-resistant gloves, if needed, to avoid prolonged or repeated skin contact.

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
Keep containers and storage containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants. To prevent fire or explosion risk from static accumulation and discharge, effectively ground product transfer system in accordance with the National Fire Protection Association standard for petroleum products.

PERSONAL HYGIENE
Minimize breathing vapor or mist. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean and dry before reuse. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION INFORMATION

TRANSPORTATION INCIDENT INFORMATION
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

39

Vulcan CHEMICALS

MATERIAL SAFETY DATA SHEET

24 Hour Emergency Phone (316) 524-5751

Division of Vulcan Materials Company / P.O. Box 7689 • Birmingham, AL 35253-0689

I – IDENTIFICATION

CHEMICAL NAME	CHEMICAL FORMULA	MOLECULAR WEIGHT
Hydrogen Chloride, Aqueous Solution	HCl	36.46

TRADE NAME

Muriatic Acid, 20° and 22° Baume, Technical, Industrial, and Commercial Grade

SYNONYMS	DOT IDENTIFICATION NO.
Hydrochloric Acid	1789

II – PRODUCT AND COMPONENT DATA

COMPONENT(S) CHEMICAL NAME	CAS REGISTRY NO.	% (Approx)	ACGIH TLV-TWA
Hydrogen Chloride	7647-01-0	35	5 ppm Ceiling

III – PHYSICAL DATA

APPEARANCE AND ODOR	SPECIFIC GRAVITY
Clear, colorless liquid with pungent, irritating odor	20° Be: 1.1600 @ 15.6/15.6°C; 22° Be: 1.1789 @ 15.6/15.6°C
BOILING POINT	**VAPOR DENSITY IN AIR (Air = 1)**
150°F - 230°F (65.6°C - 110.0°C)	1.27
VAPOR PRESSURE	**% VOLATILE, BY VOLUME**
78 mm Hg @ 20°C	35
EVAPORATION RATE	**SOLUBILITY IN WATER**
(Butyl Acetate = 1) >1	Complete

IV – REACTIVITY DATA

STABILITY	CONDITIONS TO AVOID
Stable	Contact with strong bases can cause violent reaction generating large amounts of heat.

INCOMPATIBILITY (Materials to avoid)

Bases, metals, mercuric sulfate, perchloric acid, carbides of calcium, cesium, rubidium, acetylides of cesium and rubidium, phosphides of calcium and uranium and lithium silicide.

HAZARDOUS DECOMPOSITION PRODUCTS

Hydrogen gas.

HAZARDOUS POLYMERIZATION

Will not occur

V – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)
None

FLAMMABLE LIMITS IN AIR
None

EXTINGUISHING AGENTS
N/A

UNUSUAL FIRE AND EXPLOSION HAZARDS

Reaction with metals will release flammable hydrogen gas.

VI – TOXICITY AND FIRST AID

EXPOSURE LIMITS (When exposure to this product and other chemicals is concurrent, the TLV must be defined in the workplace.)

ACGIH: 5 ppm Ceiling
OSHA: 5 ppm Ceiling

Effects described in this section are believed not to occur if exposures are maintained at or below appropriate TLVs.
Because of the wide variation in individual susceptibility, TLVs may not be applicable to all persons and those with medical conditions listed below.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Asthma, bronchitis, emphysema and other lung conditions and chronic nose, sinus or throat conditions.

ACUTE TOXICITY Primary route(s) of exposure: ☒ Inhalation ☒ Skin Absorption ☐ Ingestion

Inhalation: Hydrogen chloride gas, mist and vapor can cause irritation of respiratory tract, with burning, choking, coughing, headaches and rapid heartbeat. 35 ppm can cause irritation of throat and 50-100 ppm is nearly unbearable for 1 hour. Inflammation, destruction of nasal passages and breathing difficulties can occur with higher concentrations and may be delayed in onset. 1000-2000 ppm can be fatal.

Skin: Liquid hydrogen chloride or concentrated vapors can rapidly cause burning of skin. Repeated or prolonged contact with dilute solutions, and concentrated vapors, can cause irritation and dermatitis.

Eyes: Liquid or concentrated vapors can cause eye irritation, severe burns and permanent damage including blindness.

Ingestion: Unlikely route of exposure. Can cause severe burns of mouth, esophagus and stomach. Nausea, pain and vomiting frequently occur. Depending upon amount swallowed holes in the intestional tract, kidney inflammation, shock and death can occur.

FIRST AID

Inhalation: Move person to fresh air. If breathing stops, administer artificial respiration. Get medical attention immediately.

Skin: Remove contaminated clothing and wash skin with large quantities of water. Get medical attention.

Eyes: Wash eyes with large quantities of water. Lift upper and lower eyelids occasionally. Get medical attention immediately.

Ingestion: If conscious, give large quantities of water. Do not induce vomiting. Get medical attention immediately.

CHRONIC TOXICITY

Exposures of 100 ppm for 6 hours a day for 50 days caused only slight unrest and irritation to the eyes and nose of rabbits, guinea pigs and pigeons. The hemoglobin content of the blood was also slightly diminished. Monkeys receiving twenty exposures of 33 ppm for 6 hours did not display any adverse effects. Higher exposures (unspecified) have caused weight loss which paralleled the severity of exposure. In humans long term overexposures has been associated with erosion of the teeth.

Carcinogenicity No studies have been conducted relative to hydrogen chloride and carcinogenicity. Hydrogen chloride is not listed on the IARC, NTP or OSHA carcinogen list.

Reproductive Toxicity No studies have been conducted relative to hydrogen chloride and reproductive toxicity.

VII – PERSONAL PROTECTION AND CONTROLS

RESPIRATORY PROTECTION

For vapor concentrations between 5 and 100 ppm, use an approved full face respirator. Approved self-contained breathing apparatus with full face piece should be worn when air concentrations exceed 100 ppm or during leaks and/or emergencies.

VENTILATION

As necessary to maintain air concentration below 5 ppm, at all times.

SKIN PROTECTION

Wear neoprene or PVC rain suit, boots, and gloves.

EYE PROTECTION

Wear chemical goggles. Where splashing is possible, wear face shield in addition to goggles.

HYGIENE Avoid contact with skin and avoid breathing vapors. Do not eat, drink, or smoke in work area. Wash hands prior to eating, drinking, or using bathroom. Any protective clothing, clothing, or shoes which become contaminated with hydrochloric acid should be removed immediately, and thoroughly laundered before wearing again.

OTHER CONTROL MEASURES

To determine the exposure level(s), monitoring should be performed regularly. Safety showers and eyewash station must be available in immediate area.

VIII – STORAGE AND HANDLING PRECAUTIONS

Store in closed, properly labeled, rubber-lined steel, acid-resistant plastic, or glass containers.
) not store near strong alkalies or other reactive materials.

IX – SPILL LEAK AND DISPOSAL PRACTICES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Evacuate immediate area where concentrated fumes are present. Cleanup personnel must wear proper protective equipment (see Section VII). Completely contain spilled acid with dikes, etc., and prevent run-off into ground and surface waters or into sewers. Neutralize with soda ash or dilute caustic soda. Neutralization products, both liquid and solid, must be recovered for proper disposal.

WASTE DISPOSAL METHOD

Recovered solids or liquids may be sent to a licensed reclaimer or disposed of in a permitted waste management facility. Consult federal, state, or local disposal authorities for approved procedures.

X – TRANSPORTATION

OT HAZARD CLASSIFICATION

Corrosive

PLACARD REQUIRED

Corrosive

LABEL REQUIRED

Corrosive. Label as required by OSHA Hazard Communication Rule, 29 CFR, Part 1910.1200 (f), and any applicable state and local regulations.

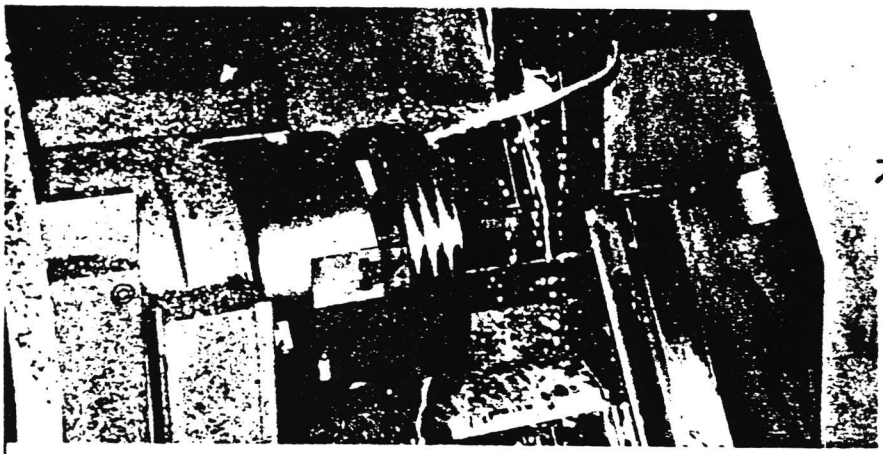
or Further Information

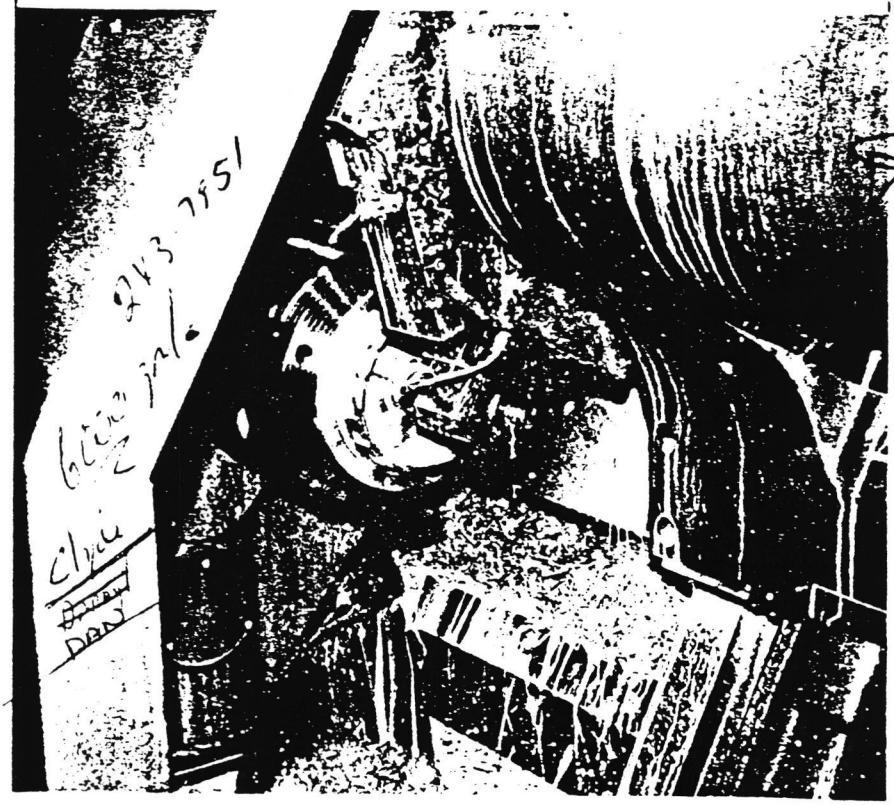
Contact Vulcan Chemicals
Technical Service Department
P.O. Box 7689
Birmingham, AL 35253-0689
205/877-3459
8 AM to 5 PM Central Time
Monday Through Friday
For Emergency Information Call: 316/524-5751 (24 hours)

TE OF PREPARATION: October 15, 1985

THE COOLER™

General Purpose Synthetic Cutting and Grinding Fluid





The Cooler is a general purpose multi-duty synthetic chemical coolant for use on cast iron, ductile iron and most other metals.

Superior Wetting and Detergency:
Low foaming. High wetting. The Cooler quickly penetrates to the point of cut providing a cooler, cleaner, smoke-free operation.

Completely Water Resoluble Residue:
The Cooler leaves a completely water resoluble film on the machine and parts. No gummy, sticky, tacky residue to tie up machine and create excessive maintenance costs.

Excellent Rancidity Control:
Formulated with high quality raw materials, The Cooler provides excellent rancidity control.

Crystal Clear:
The Cooler is a crystal clear blue concentrate and forms a water-clear solution for excellent visibility of the work piece.

Non-Corrosive & Non-Staining:
The Cooler contains superior corrosion inhibitors to provide corrosion and stain protection on cast iron, steel, aluminum, brass, copper and most modern alloys.

Rejects Tramp Oil:
Employing modern formulation techniques, The Cooler rejects tramp oil emulsification for ease of removal through skimming.

Safe:
The Cooler does not contain phenols, creosols, nitrates, harsh alkalies, phosphates or heavy metals. The Cooler is mild and non-irritating to the skin and operators like the product's blue color and pleasant fragrance. Non-flammable.

Directions for Use:
A concentrate designed to be diluted with water, The Cooler forms a clear solution in a wide range of water temperatures and hardness.

1. To insure a uniform solution, mix The Cooler with water at appropriate concentrations in a separate container. (Refer to Recommended Starting Concentration Chart.)
2. Agitate solution until thoroughly mixed.
3. Add the mixed coolant to the cleaned sump.
4. **Makeup:** When adding makeup to the machine, add The Cooler at ½ to ⅔ the concentration desired in the machine. For example, startup of 10:1 requires 20:1 makeup. Always add diluted solution as makeup; never plain water.

NOTE: Do not use this product on or with galvanized parts, splash guards, buckets or piping.

RECOMMENDED STARTING CONCENTRATION
(parts water to parts The Cooler)

	GRAY CAST IRON	DUCTILE IRON	BRASS ALLOYS	MILD STEEL	STAINLESS STEEL	ALUMINUM ALLOYS	COPPER ALLOYS
GENERAL TURNING	25-1	20-1	20-1	20-1	15 to 20-1	20-1	20-1
BORING	15-1	15-1	20-1	20-1	15-1	15-1	15-1
PLANING SPOT FACING	20-1	20-1	20-1	20-1	15-1	15-1	15-1
GENERAL MILLING	20 to 25-1	20-1	20-1	20-1	15 to 20-1	20-1	20-1
DRILLING	10 to 15-1	10-1	10-1	10-1	10-1	10-1	10-1
TAPPING REAMING	10-1	10-1	10-1	10-1	10-1	10-1	10-1
GEAR CUTTING HOBBING	10-1	10-1	10-1	10-1	10-1	10-1	10-1
THREADING	10-1	10-1	10-1	10-1	10-1	10-1	10-1
SAWING	20-1	15-1	10-1	10-1	10-1	15-1	15-1
BROACHING	10-1	10-1	10-1	10-1	10-1	10-1	10-1
SURFACE GRINDING	30-1	30-1	25-1	30-1	25-1	30-1	30-1
OD & FINISH GRINDING	20-1	25-1	25-1	25-1	20-1	25-1	25-1
ID GRINDING	20-1	20-1	20-1	20-1	20-1	20-1	20-1
CYLINDRICAL GRINDING	25-1	25-1	25-1	25-1	20-1	25-1	25-1

Specification Data:
Viscosity – 650 c.p.s. @ 24°C/75°F
Specific Gravity – 1.04 @ 24°C/75°F
pH (Concentrate) – 8.4-8.6
pH (10% solution) – 8.2-8.4
Density @ 24°C/75°F – 8.67 lbs./gal.
Flash Point (COC) – None
Miscibility – Completely miscible in all proporations with hot or cold water.
Storage Stability –
a. Shelf @ 24°C/75°F – one year minimum
b. Accelerated @ 49°C/120°F – 60 days
c. Freeze/Thaw – Product will withstand three freeze/thaw cycles.

CAUTION: May cause eye irritation. This product is alkaline in nature. It should not be taken internally.
First Aid: Internal: If swallowed, give fruit juices or vinegar and induce vomiting.
Eyes: Irrigate well with water. If irritated, call a physician.
Keep away from children.

Packaging:
The Cooler is packaged in attractive 55-gallon drums and 5-gallon pails. Label copy is provided in both **English** and **Spanish.**

Guarantee:
Spartan's modern manufacturing and laboratory control insure uniform quality. If dissatisfied with performance of product, any unused portion may be returned for credit. Use product as directed and read all precautionary statements.

For Institutional and Industrial Use Only

THE COOLER DILUTION RATIO VS. REFRACTIVE INDEX*

Dilution Ratio	Refractive Index
5-1	7.2
10-1	3.6
15-1	2.7
20-1	1.8
25-1	1.4
30-1	1.2
35-1	1.1
40-1	0.9
50-1	0.7

*American Instrument Model 10440 Industrial Fluid Tester

Formula for determining **T**otal **V**olume by **G**allons

$$\frac{\text{Width} \times \text{Length} \times \text{Height (in inches)}}{231} = \textbf{TVG}$$

Spartan Chemical Co., Inc.
110 N. Westwood Ave.
Toledo, Ohio 43607

ISSA MEMBER The Experts on Cleaning and Maintenance

Distributed by:

GATEWAY SUPPLY CO., INC.
229 [illegible] AVE.
CLINTON, IOWA [illegible] 319-242-7160

SPARTAN CHEMICAL CO., INC.
MATERIAL SAFETY DATA SHEET

SECTION I
PRODUCT IDENTIFICATION

PRODUCT NAME OR NUMBER (as it appears on label)
THE COOLER

MANUFACTURER'S NAME
Spartan Chemical Co., Inc.

EMERGENCY TELEPHONE NO.
(419) 531-5551

ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)
110 N. Westwood Ave., Toledo, OH 43607

MANUFACTURER'S D-U-N-S NO.
00-503-6728

HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101)
Unrestricted

ADDITIONAL HAZARD CLASSES (AS APPLICABLE)
n/a

CHEMICAL FAMILY
n/a

FORMULA
n/a

SECTION II - HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TLV	LISTED AS A CARCINOGEN IN NTP, IARC OR OSHA 1910(Z) (SPECIFY)

NO HAZARDOUS INGREDIENTS

SECTION III - PHYSICAL DATA

BOILING POINT
212-215°F ____°C

SPECIFIC GRAVITY (H_2O = 1)
1.04

VAPOR PRESSURE - 18
@ 75 °F ____°C __x__ mm Hg ____psi

PERCENT SOLID BY WEIGHT (%)
31-33

VAPOR DENSITY (AIR = 1)
Unknown

EVAPORATION RATE (but. ace. = 1)
<1

SOLUBILITY IN WATER
Complete

APPEARANCE AND ODOR
Clear blue colored, moderately viscous liquid with pine odor

pH - (concentrate) 8.4-8.6

IS MATERIAL: (LIQUID) SOLID GAS PASTE POWDER

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT
None °F °C

METHOD USED - ASTM - D92

FLAMMABLE LIMITS
n/a

LEL

UEL

EXTINGUISHING MEDIA
n/a

SPECIAL FIRE FIGHTING PROCEDURES
n/a

UNUSUAL FIRE AND EXPLOSION HAZARDS
n/a

SECTION V - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE - CONDITIONS TO AVOID
Concentrate - Dryness of the skin & eye irritation.

THRESHOLD LIMIT VALUE - Not established

PRIMARY ROUTES OF ENTRY INHALATION ____ SKIN CONTACT _X_ OTHER (SPECIFY)

CONDITIONS AGGRAVATED BY USE
Unknown

EMERGENCY AND FIRST AID PROCEDURES
If swallowed, give large volumes of water and induce vomiting. In case of eye contact, irrigate well with water for at least 15 minutes. If irritated, call physician. In case of skin contact (with concentrate) flush well with water for at least 15 minutes.

SECTION VI - REACTIVITY DATA

STABILITY: UNSTABLE ____ CONDITIONS TO AVOID
STABLE _X_

INCOMPATIBILITY (MATERIALS TO AVOID)
Strong acids, strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS
None known

HAZARDOUS POLYMERIZATION: MAY OCCUR ____ CONDITIONS TO AVOID
WILL NOT OCCUR _X_

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Flush with water to sanitary sewer system.

WASTE DISPOSAL METHOD
Same as above.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE)
Nothing special

VENTILATION: LOCAL EXHAUST (SPECIFY RATE) X SPECIAL
MECHANICAL (GENERAL) (SPECIFY RATE) OTHER

PROTECTIVE GLOVES (SPECIFY TYPE)
Not necessary

EYE PROTECTION (SPECIFY TYPE)
Safety glasses

OTHER PROTECTIVE EQUIPMENT
None

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
None necessary

OTHER PRECAUTIONS
None

Spartan Chemical Co., Inc.
e Cooler
f: 29 CFR 1910:1200 (OSHA)

NAME Thomas J. Mitchell
TITLE Assistant Vice President, Research
DATE August 8, 1985

VIKING CHEMICAL COMPANY
1827 Eighteenth Avenue
Post Office Box 1595
Rockford, Illinois 61110
815-397-0500

June 16, 1989

COLLIS INC.
ATTN: CHARLEEN CUNNINGHAM
2005 S. 19th St.
P.O. Box 231
Clinton, Iowa 52732

Dear Customer,

Enclosed are the Material Safety Data Sheet(s) (MSDS) which provide information on products which you have previously purchased from Viking. These MSDS have either been revised since you last received them, or are for products which you have purchased from us sometime in the past. Please consider them as the current copy to replace any previous version you may have received.

The distribution of these sheets is part of a continuing program at Viking of providing information and updating our valued customers. This information should be made available to any health and safety personnel in your firm as well as all employees handling these products. Any significant changes in health, safety, or environmental protection information will be promptly forwarded to you. For this reason, you may wish to maintain records of any internal distribution so that updated sheets may be forwarded to the appropriate personnel.

When a Viking Chemical product is resold in the original package with a Viking label, the reseller has the responsibility for ensuring that the Viking MSDS is provided to its purchaser, but we will gladly handle requests for MSDS's directly with them.

We appreciate your patronage and will continue to provide the quality products and service you have come to expect.

Sincerely,

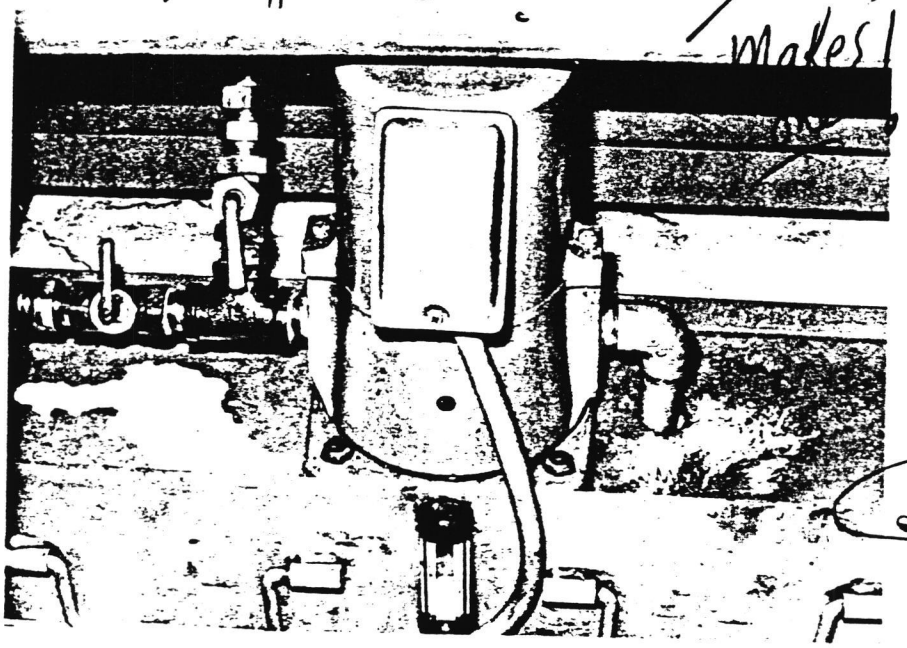
VIKING CHEMICAL COMPANY
Quality Assurance Department

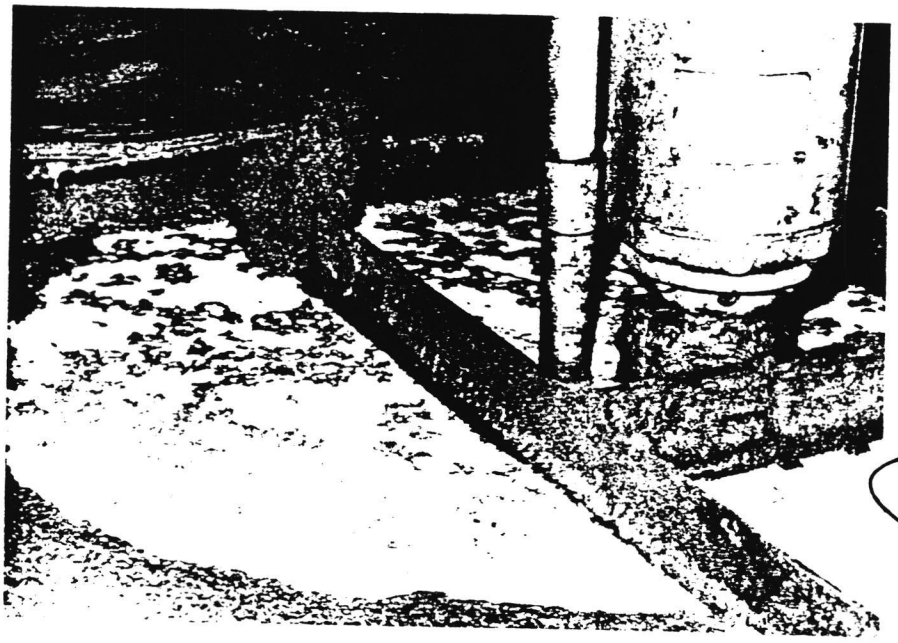
Enclosure(s)

THE CLEANER™

Heavy Duty Detergent Complex for Sump and Machine Cleaning

Mix H2O & oil / Makes 1





The Cleaner is a heavy-duty detergent complex formulated specifically to remove build-ups and kill odor and rancidity causing microorganisms in the coolant systems of metalworking machines prior to recharging with fresh coolant.

Rapid Grease and Tramp Oil Emulsification:
The excellent emulsification characteristics of The Cleaner removes accumulations of grease and lubricating oils from the machine surface, coolant lines, filtration equipment and coolant sump, rinsing them away.

Kills Odor Causing Bacteria and Fungus:
The high alkalinity, concentrated detergency and germicidal action of The Cleaner removes bacterial slime, odor and scum from even hard-to-reach areas of the machine such as coolant lines, tool holders, coolant pumps and filters.

Easy to Use:
The Cleaner is completely soluble in hot or cold water and no special equipment is required for mixing.

Guarantee:
Spartan's modern manufacturing and laboratory control insure uniform quality. If dissatisfied with performance of product, any unused portion may be returned for credit. Use product as directed and read all precautionary statements.

E.P.A. Reg. No. 5741-19
E.P.A. Est. No. 5741-OH-1

Appr. @ 580/55

Kill Germs

Directions for Use:
It is a violation of Federal Law to use this product in a manner inconsistent with its labeling. Always use The Cleaner prior to recharging to avoid contamination of the new coolant and to insure longer coolant life.

1. Pump out or drain the machine thoroughly. Manually remove any chip build- up, slime accumulation and other heavy deposits.
2. Remove all base plates, pump filters and removable weirs to insure accessibility of all hard-to-reach areas.
3. Add The Cleaner to the machine sump at one (1) part The Cleaner to 30 or 40 parts water. (Note: A higher concentration such as 1:10 may be required if severe rancidity or excessive buildup exists.) Circulate solution for at least 10 minutes.
4. While The Cleaner is being circulated in the machine, manually scrub down all machine surfaces, coolant troughs, splash guards, filter areas and tooling mechanisms.
5. Pump out The Cleaner solution and thoroughly rinse the coolant system and machine with water at least twice.
6. Charge system with fresh coolant. (Refer to Recommended Starting Coolant Concentration Chart.)

Repeat cleaning procedure when system becomes excessively dirty.

Formula for determining Total Volume by Gallons

$$\frac{\text{Width} \times \text{Length} \times \text{Height (in inches)}}{231} = \textbf{TVG}$$

Specification Data:

ACTIVE INGREDIENT:
n-alkyl (C_{14}-50%, C_{12}-40%, C_{16}-10%) dimethyl benzyl ammonium chlorides 2.50%
INERT INGREDIENTS 97.50%

Specific Gravity @ 24°C/75°F – 1.04
pH (Concentrate) – 13.2-13.5
Density @ 24°C/75°F – 8.7 lbs/gal.
Flash Point – None
Cloud Point – Clear to 72°C/162°F
Viscosity – Non-viscous
Color – Red
Miscibility – completely miscible in all proportions with hot or cold water; forms emulsion with oils and water insoluble solvents.
Storage Stability:
a. Shelf @ 24°C/75°F in excess of one year
b. Accelerated @ 49°C/120°F in excess of 90 days
c. Freeze/Thaw – freezes and thaws with complete clarity.
Contains biodegradable surfactants
Phosphate Free

For Institutional and Industrial Use Only

Spartan Chemical Co., Inc.
110 N. Westwood Ave.
Toledo, Ohio 43607

RECOMMENDED STARTING COOLANT CONCENTRATION
(parts water to parts coolant)

	GRAY CAST IRON	DUCTILE IRON	BRASS ALLOYS	MILD STEEL	STAINLESS STEEL	HARD STEEL ALLOYS	ALUMINUM ALLOYS	COPPER ALLOYS
GENERAL TURNING	C 25-1	S15-1 C20-1	S 25-1	S25-1 C20-1	S 15to20-1	S 15-1	S 20to25-1	S 25-1
BORING	C 15-1	C or S 15-1	S 20-1	C20-1 S25-1	S 20-1	S 15-1	S 15-1	S 20-1
PLANING SPOT FACING	C 20-1	S15-1 C20-1	S 25-1	C20-1 S25-1	S 20-1	S 15-1	S 20-1	S 25-1
GENERAL MILLING	C20 to 25-1	C or S C 20-1	S 25-1	S25-1 C20-1	S 20-1	S15 to 20-1	S 20-1	S 25-1
GENERAL DRILLING	C10 to 15-1	C or S 10-1	S 10-1	S15-1 C10-1	S 10-1	S 10-1	S 10to15-1	S 10-1
TAPPING REAMING	C 10-1	C or S 10-1	S 10-1	C8-1 S10-1	S8 to 10-1	S5 to 10-1	S 10-1	S 10-1
GEAR CUTTING HOBBING	C 10-1	C or S 10-1	S 10-1	C or S 10-1	S 10-1	S5 to 10-1	S 10-1	S 10-1
SCREW MACHINES	S5 to 10-1	S 10-1	S 10-1	S 10-1	S 10-1	S 10-1	S 10-1	S 10-1
THREADING	C 10-1	C or S 10-1	S 10-1	C or S 10-1	S 10-1	S 10-1	S 10-1	S 10-1
SAWING	C 20-1	C or S 15-1	S 15-1	CorS15 to 20-1	S 15-1	S10 to 15-1	S 15-1	S 15-1
BROACHING	S5 to 10-1	S5 to 10-1	S 10-1	S 10-1	S5 to 10-1	S5 to 10-1	S 10-1	S 10-1
SURFACE GRINDING	C25 to 30-1	C 30-1	C or S 30-1	C or S 30-1	C or S 20-1	CorS15 to 20-1	CorS25 to 30-1	C or S 30-1
OD & FINISH GRINDING	C 20-1	C20 to 25-1	C or S 20-1	C or S 20-1	C or S 20-1	CorS15 to 20-1	CorS20 to 25-1	CorS20 to 25-1
ID & CYLINDRICAL GRINDING	C 20-1	C 20-1	C or S 20-1	C or S 20-1	S 20-1	CorS15 to 20-1	CorS20 to 25-1	C or S 20-1

C – The Cooler – Spartan's synthetic cutting and grinding fluid
S – The Cutter – Spartan's soluble oil cutting and grinding fluid

PRECAUTIONARY STATEMENTS
Hazard to Humans and Domestic Animals

DANGER:
KEEP OUT OF REACH OF CHILDREN.

Corrosive. Causes severe eye and skin damage. Do not get in eyes or on skin or on clothing. Wear Goggles or face shield and rubber gloves when handling. Harmful if swallowed.

STATEMENT OF PRACTICAL TREATMENT

In case of contact immediately flush eyes or skin with plenty of water for at least 15 minutes – for eyes call a physician. Remove and wash contaminated clothing before reuse. If swallowed, drink milk, egg white, gelatin solution, or large quantities of water. Avoid alcohol. Call a physician immediately.

NOTE TO PHYSICIAN

Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

Pesticide Disposal: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA regional office for guidance.

Container Disposal: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill. or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

Distributed by:

SPARTAN CHEMICAL CO., INC.
MATERIAL SAFETY DATA SHEET

SECTION I
PRODUCT IDENTIFICATION

PRODUCT NAME OR NUMBER (as it appears on label)
THE CLEANER
MANUFACTURER'S NAME
Spartan Chemical Co., Inc.
EMERGENCY TELEPHONE NO.
(419) 531-5551
ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)
110 N. Westwood Ave., Toledo, OH 43607
MANUFACTURER'S D-U-N-S NO.
00-503-6728
HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101)
Unrestricted
ADDITIONAL HAZARD CLASSES (AS APPLICABLE)
n/a
CHEMICAL FAMILY
n/a
FORMULA
n/a

SECTION II - HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TLV	LISTED AS A CARCINOGEN IN NTP, IARC OR OSHA 1910(Z) (SPECIFY)

NO HAZARDOUS INGREDIENTS

SECTION III - PHYSICAL DATA

BOILING POINT
212-215°F ____°C
SPECIFIC GRAVITY (H_2O = 1)
1.04
VAPOR PRESSURE - 18
@ 75 °F ____°C x mm Hg ____psi
PERCENT SOLID BY WEIGHT (%) - 16-18
VAPOR DENSITY (AIR = 1)
Unknown
EVAPORATION RATE (but. ace. = 1)
<1
SOLUBILITY IN WATER
Complete
APPEARANCE AND ODOR
Red, non-viscous liquid
pH
concentrate - 13.2 - 13.4
IS MATERIAL: (LIQUID) SOLID
GAS PASTE POWDER

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT METHOD USED - ASTM - D92 FLAMMABLE LIMITS LEL UEL
None °F °C
n/a
EXTINGUISHING MEDIA
n/a
SPECIAL FIRE FIGHTING PROCEDURES
n/a
UNUSUAL FIRE AND EXPLOSION HAZARDS
n/a

SECTION V - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE - CONDITIONS TO AVOID
Skin & eye irritant and defatter with prolonged exposure.

THRESHOLD LIMIT VALUE - Not established

PRIMARY ROUTES OF ENTRY INHALATION ____ SKIN CONTACT __x__ OTHER (SPECIFY)

CONDITIONS AGGRAVATED BY USE - Dermatitis

EMERGENCY AND FIRST AID PROCEDURES - In case of contact immediately flush eyes with plenty of water for at least 15 minutes; call a physician. Flush skin with water. Wash clothing before reuse. If swallowed do not induce vomiting. Give large quantities of water. Call a physician immediately. Never give anything by mouth to an unconscious person.

SECTION VI - REACTIVITY DATA

STABILITY: UNSTABLE ____ CONDITIONS TO AVOID
STABLE __x__

INCOMPATIBILITY (MATERIALS TO AVOID)
Strong acids and strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS
None known

HAZARDOUS POLYMERIZATION MAY OCCUR ____ WILL NOT OCCUR __x__ CONDITIONS TO AVOID

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Small quantities can be flushed with water into sanitary sewer; large quantities should be absorbed or contained.

WASTE DISPOSAL METHOD
Same as above.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE) - Not required

VENTILATION:
LOCAL EXHAUST (SPECIFY RATE) - X
MECHANICAL (GENERAL) (SPECIFY RATE)
SPECIAL
OTHER

PROTECTIVE GLOVES (SPECIFY TYPE)
Resistant gloves

EYE PROTECTION (SPECIFY TYPE)
Approved safety glasses with side shield

OTHER PROTECTIVE EQUIPMENT
Not required

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
None

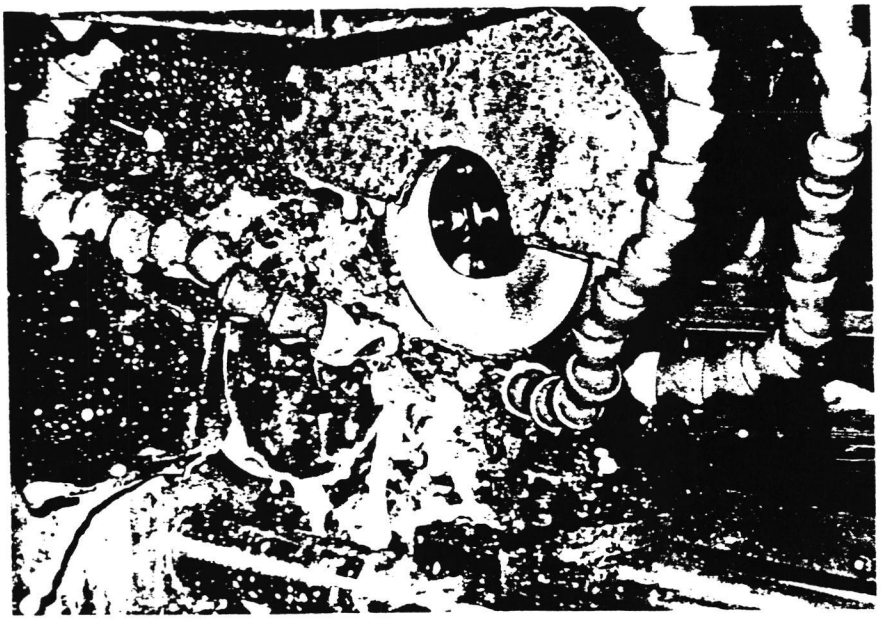
OTHER PRECAUTIONS
None

artan Chemical Co., Inc.
e Cleaner
f: 29 CFR 1910:1200 (OSHA)

NAME Thomas J. Mitchell
TITLE Assistant Vice President, Research
DATE August 8, 1985

THE GRINDER™

No-Foam Synthetic Grinding Fluid



The Grinder is a synthetic chemical fluid designed for high-speed grinding operations on most metals.

Eliminates Foaming and Misting:
A non-foaming formula, The Grinder eliminates foaming and misting problems in high-speed grinding operations.

Extends Wheel Life:
The Grinder is formulated with special ingredients to increase wheel life, improve surface finish and to help prevent wheel loading.

Excellent for Carbide:
A special inhibitor is incorporated in The Grinder formula to help prevent cobalt leaching on carbide grinding operations.

Crystal Clear:
The Grinder is a crystal clear blue concentrate and forms a water clear solution for excellent visibility of the workpiece.

Controls Rancidity:
Formulated with high quality raw materials, The Grinder provides excellent rancidity control.

Excellent Filterability:
The Grinder works extremely well with diatomaceous earth, positive media, cyclonic and settling type filtration units.

Non-Corrosive & Non-Staining:
The Grinder contains superior corrosion inhibitors to provide corrosion and stain protection on carbide, cast iron, steel, aluminum, brass, copper and most modern alloys.

Completely Water Resoluble Residue:
The Grinder leaves a completely water resoluble film on the machine and parts. No gummy, sticky, tacky residue.

Safe:
The Grinder does not contain phenols, creosols, PCB's, nitrates, solvents, harsh alkalis, phosphates or heavy metals. Non-flammable, mild and non-irritating to the skin. No unpleasant fumes.

Directions for Use:
A concentrate designed to be diluted with water, The Grinder forms a clear solution in a wide range of water temperatures and hardnesses.

1. To insure a uniform solution, mix The Grinder with water at the appropriate concentration in a separate container. For most grinding operations, The Grinder should be charged at a 20:1 (5%) concentration.
2. Agitate solution until thoroughly mixed.
3. Add the mixed coolant to the cleaned sump.
4. **Makeup:** For most high-speed grinding operations, add makeup to The Grinder at approximately ⅓ the concentration desired in the machine. For example, a starting concentration of 20:1 requires 50:1 makeup. Always add **diluted** solution as makeup. Never add plain water to the machine sump.

RECOMMENDED STARTING CONCENTRATION

For most grinding operations, The Grinder should be charged at a 20:1 (5%) concentration. The Grinder can also be used on light duty machining operations for the easier to machine metals. The concentration for this should be 20:1 (5%).

The Grinder Dilution Ratio vs. Refractive Index*

Dilution Ratio	Refractive Index
5-1	6.0
10-1	3.0
15-1	2.3
20-1	1.5
25-1	1.2
30-1	0.9
35-1	0.8
40-1	0.7
50-1	0.6

*American Instrument Model 10440 Industrial Fluid Tester

NOTE: DO NOT USE THIS PRODUCT ON OR WITH GALVANIZED PARTS, SPLASH GUARDS, BUCKETS OR PIPING.

Formula for determining Total Volume by Gallons

$$\frac{\text{Width} \times \text{Length} \times \text{Height (in inches)}}{231} = \text{Total Sump Capacity in Gallons}$$

Specification Data:
Specific Gravity – 1.06@24°C/75°F
Viscosity – Water thin
pH (Concentrate) – 9.2-9.4
pH (10% solution) – 9.0-9.2
Density@24°C/75°F – 8.84 lbs./gal.
Flash Point (COC) – None
Miscibility – Completely miscible in all proportions with hot or cold water.
Storage Stability –

a. Shelf@ 24°C/75°F – one year minimum
b. Accelerated@49°C/120°F – 60 days
c. Freeze/Thaw – Product will withstand three freeze/thaw cycles.

CAUTION: May cause eye irritation. This product is alkaline in nature. It should not be taken internally.
First Aid: Internal: If swallowed, give fruit juices or vinegar and induce vomiting.
Eyes: Irrigate well with water. If irritated, call a physician.
Keep away from Children.

Packaging:
The Grinder is packaged in attractive 55-gallon drums and 5-gallon pails. Label copy is provided in both **English** and **Spanish.**

Guarantee:
Spartan's modern manufacturing and laboratory control insure uniform quality. If dissatisfied with performance of product, any unused portion may be returned for credit. Use product as directed and read all precautionary statements.

For Institutional and Industrial Use Only

Spartan Chemical Co., Inc.
110 N. Westwood Ave.
Toledo, Ohio 43607

ISSA The Experts on Cleaning and Maintenance

Distributed by:

GATEWAY SUPPLY CO., INC.
229 MAIN AVE.
CLINTON, IOWA 52732 319-242-7160

SECTION V - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE - CONDITIONS TO AVOID — THRESHOLD LIMIT VALUE - Not established

May cause skin and eye irritation.

PRIMARY ROUTES OF ENTRY INHALATION ____ SKIN CONTACT _X_ OTHER (SPECIFY)

CONDITIONS AGGRAVATED BY USE

Unknown

EMERGENCY AND FIRST AID PROCEDURES

If swallowed, give large volumes of water and induce vomiting. In case of eye contact, irrigate well with water for at least 15 minutes. If irritated, call physician. In case of skin contact (with concentrate), flush well with water for at least 15 minutes.

SECTION VI - REACTIVITY DATA

STABILITY: UNSTABLE ___ CONDITIONS TO AVOID

STABLE _X_

INCOMPATIBILITY (MATERIALS TO AVOID)

Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS

None known

HAZARDOUS POLYMERIZATION: MAY OCCUR ____ WILL NOT OCCUR _X_ CONDITIONS TO AVOID

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Flush with water to sanitary sewer system.

WASTE DISPOSAL METHOD

Same as above.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE)

Nothing special

VENTILATION: LOCAL EXHAUST (SPECIFY RATE) X SPECIAL

MECHANICAL (GENERAL) (SPECIFY RATE) OTHER

PROTECTIVE GLOVES (SPECIFY TYPE)

Not necessary

EYE PROTECTION (SPECIFY TYPE)

Safety glasses

OTHER PROTECTIVE EQUIPMENT

None

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

None necessary

OTHER PRECAUTIONS

None

Spartan Chemical Co., Inc.
The Grinder
Ref: 29 CFR 1910:1200 (OSHA)

NAME Thomas J. Mitchell
TITLE Assistant Vice President, Research
DATE September 13, 1985

SPARTAN CHEMICAL CO., INC.
MATERIAL SAFETY DATA SHEET

SECTION I
PRODUCT IDENTIFICATION

PRODUCT NAME OR NUMBER (as it appears on label)
THE GRINDER
MANUFACTURER'S NAME
Spartan Chemical Co., Inc.
ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)
110 N. Westwood Ave., Toledo, OH 43607

EMERGENCY TELEPHONE NO.
(419) 531-5551
MANUFACTURER'S D-U-N-S NO.
00-503-6728

HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101)
Unrestricted
ADDITIONAL HAZARD CLASSES (AS APPLICABLE)
n/a
CHEMICAL FAMILY
n/a

FORMULA
n/a

SECTION II - HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TLV	LISTED AS A CARCINOGEN IN NTP, IARC OR OSHA 1910(Z) (SPECIFY)

NO HAZARDOUS INGREDIENTS

SECTION III - PHYSICAL DATA

BOILING POINT
212 °F ____ °C
VAPOR PRESSURE - 18
@ 75 °F ____ °C x mm Hg ____ psi
VAPOR DENSITY (AIR = 1)

SPECIFIC GRAVITY (H_2O = 1)
1.06

EVAPORATION RATE (but. ace. = 1)
<1

PERCENT SOLID BY WEIGHT (%)
36-38

SOLUBILITY IN WATER
Complete
pH
(concentrate) 9.4 - 9.6

APPEARANCE AND ODOR
Clear, blue colored, odorless liquid

IS MATERIAL: (LIQUID) SOLID
GAS PASTE POWDER

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT METHOD USED - ASTM - D92 FLAMMABLE LIMITS - LEL UEL
None °F °C n/a

EXTINGUISHING MEDIA
n/a

SPECIAL FIRE FIGHTING PROCEDURES
n/a

UNUSUAL FIRE AND EXPLOSION HAZARDS
n/a

VIKING CHEMICAL COMPANY
1827-18th Ave.
P.O. BOX 1595
ROCKFORD, IL 61110

(815) 397-0500

MATERIAL SAFETY DATA SHEET

Aug. 18, 1986

A. IDENTIFICATION AND EMERGENCY INFORMATION

PRODUCT NAME
CUT-RITE 300

CHEMICAL NAME
PETROLEUM HYDROCARBON WITH ADDITIVES

PRODUCT APPEARANCE AND ODOR
Yellow liquid - petroleum odor

EMERGENCY TELEPHONE NUMBER
CHEMTREC - 800-424-9300
VIKING CHEMICAL CO. - 815-397-0500

B. COMPONENTS AND HAZARD INFORMATION

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
** SEE SECTION 'K' **				

EXPOSURE LIMIT FOR TOTAL PRODUCT
5 mg/m3 for oil mist in air

BASIS
OSHA Regulation 29 CFR 1910.1000

C. EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN CONTACT
In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INHALATION
Vapor pressure is very low. Vapor inhalation under ambient conditions is normally not a problem. If overcome by vapor from hot product, immediately remove from exposure and call a physician. If breathing is irregular or has stopped, start resuscitation; administer oxygen, if available. If overexposed to oil mist, remove from further exposure until excessive oil mist condition subsides.

INGESTION
If ingested, DO NOT induce vomiting; call a physician immediately.

D. FIRE AND EXPLOSION HAZARD INFORMATION

FLASH POINT (MINIMUM) 390°

ASTM D 92, Cleveland Open Cup

AUTOIGNITION TEMPERATURE
Greater than 260°C (500°F)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) - HAZARD IDENTIFICATION

Health	Flammability	Reactivity
1	1	0

HANDLING PRECAUTIONS
Use product with caution around heat, sparks, pilot lights, static electricity, and open flame.

FLAMMABLE OR EXPLOSIVE LIMITS (APPROXIMATE PERCENT BY VOLUME IN AIR)
Estimated values: Lower Flammable Limit 0.9% Upper Flammable Limit 7%

EXTINGUISHING MEDIA AND FIRE FIGHTING PROCEDURES
Foam, water spray (fog), dry chemical, carbon dioxide and vaporizing liquid type extinguishing agents may all be suitable for extinguishing fires involving this type of product, depending on size or potential size of fire and circumstances related to the situation. Plan fire protection and response strategy through consultation with local fire protection authorities or appropriate specialists.

The following procedures for this type of product are based on the recommendations in the National Fire Protection Association's "Fire Protection Guide on Hazardous Materials", Eighth Edition (1984):

Use water spray, dry chemical, foam or carbon dioxide. Use water to keep fire-exposed containers cool. If a leak or spill has not ignited, use water spray to disperse the vapors and to provide protection for men attempting to stop a leak. Water spray may be used to flush spills away from exposures. Minimize breathing gases, vapor, fumes or decomposition products. Use supplied-air breathing equipment for enclosed or confined spaces or as otherwise needed.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS
Fumes, smoke, carbon monoxide, aldehydes and other decomposition products, in the case of incomplete combustion.

"EMPTY" CONTAINER WARNING
"Empty" containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to clean since residue is difficult to remove. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All other containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. For work on tanks refer to Occupational Safety and Health Administration regulations, ANSI Z49.1, and other governmental and industrial references pertaining to cleaning, repairing, welding, or other contemplated operations.

E. HEALTH AND HAZARD INFORMATION

VARIABILITY AMONG INDIVIDUALS
Health studies have shown that many petroleum hydrocarbons and synthetic lubricants pose potential human health risks which may vary from person to person. As a precaution, exposure to liquids, vapors, mists or fumes should be minimized.

EFFECTS OF OVEREXPOSURE (Signs and symptoms of exposure)
Prolonged or repeated skin contact may cause skin irritation.

NATURE OF HAZARD AND TOXICITY INFORMATION
Prolonged or repeated skin contact with this product tends to remove skin oils possibly leading to irritation and dermatitis; however, based on human experience and available toxicological data, this product is judged to be neither a "corrosive" nor an "irritant"

EYE PROTECTION
Use splash goggles or face shield when eye contact may occur.

OTHER PROTECTIVE EQUIPMENT
Use chemical-resistant apron or other impervious clothing, if needed, to avoid contaminating regular clothing which could result in prolonged or repeated skin contact.

WORK PRACTICES / ENGINEERING CONTROLS
Keep containers and storage containers closed when not in use. Do not store near heat, sparks, flame or strong oxidants.

PERSONAL HYGIENE
Minimize breathing vapor, mist or fumes. Avoid prolonged or repeated contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Remove contaminated shoes and thoroughly clean before reuse; discard if oil-soaked. Cleanse skin thoroughly after contact, before breaks and meals, and at end of work period. Product is readily removed from skin by waterless hand cleaners followed by washing thoroughly with soap and water.

J. TRANSPORTATION INFORMATION

TRANSPORTATION INCIDENT INFORMATION
For further information relative to spills resulting from transportation incidents, refer to latest Department of Transportation Emergency Response Guidebook for Hazardous Materials Incidents, DOT P 5800.3.

DOT IDENTIFICATION NUMBER
Not applicable

K. ADDITIONAL HEALTH INFORMATION

HEALTH HAZARDS (acute/chronic)

It has been established that C_{24}, 43% chlorine chlorinated paraffins were not mutagenic when tested in the Ames Assay. When force fed to rats & mice at high levels over long periods of time, the C_{24}, 43% chlorine chlorinated paraffin, in combination with corn oil, produced a carcinogenic response only in male mice. This lack of evidence of carcinogenicity in rats & female mice with only an increase in the incidence of lymphomas in male mice is interpreted as demonstrating the absence of a carcinogenic hazard with this chemical.

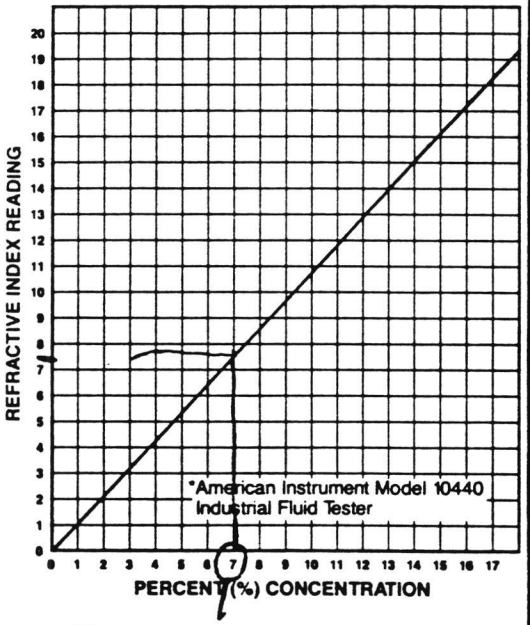
THE CUTTER

Soluble Oil Based Cutting and Grinding Fluid with EP Properties

- Extends Tool Life/Improves Surface Finish
- Controls Rancidity
- Labor Saving/Economical
- Free Flowing Residue
- Safe

~~THE CUTTER~~

Refractive Index* vs. Concentration



To obtain the following concentrations, use the appropriate dilution ratio:

Concentration	Dilution Ratio
10:1 (10%)	13 oz. per gal.
15.1 (7½%)	10 oz. per gal.
20:1 (5%)	7 oz. per gal.
25:1 (4%)	5 oz. per gal.
30:1 (3%)	4 oz. per gal.
40:1 (2½%)	3 oz. per gal.
50:1 (2%)	2 oz. per gal.

***Note: Always add The Cutter to water.**

SPARTAN CHEMICAL CO., INC.
110 N. Westwood Avenue
Toledo, OH 43607

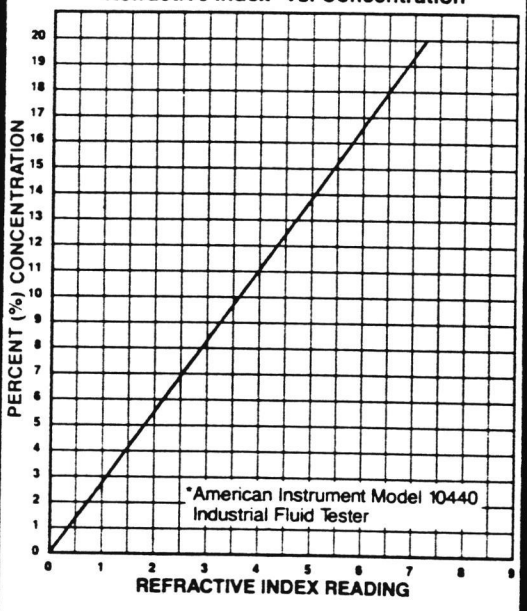
Pocket Guide For
THE COOLER

General Purpose Synthetic Cutting and Grinding Fluid

- Superior Wetting and Detergency
- Completely Water Resoluble Residue
- Excellent Rancidity Control
- Non-Corrosive and Non-Staining
- Rejects Tramp Oil
- Safe

THE COOLER

Refractive Index* vs. Concentration



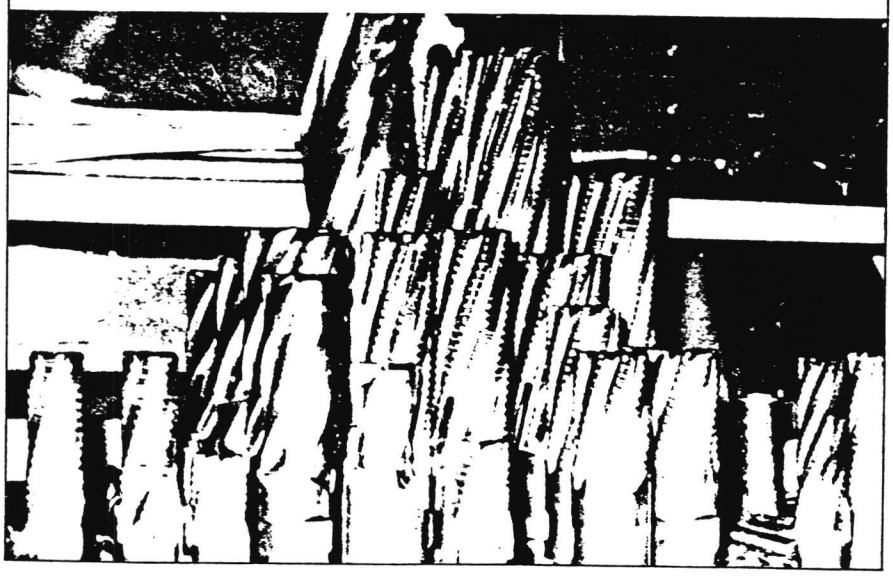
Formula for determining
Total Volume by Gallons

$$\frac{\text{Width} \times \text{Length} \times \text{Height (in inches)}}{231} = \textbf{TVG}$$

***Note: Do not use this product on or with galvanized metal.**

THE CUTTER™

Soluble Oil Based Cutting and Grinding Fluid Fortified with EP Properties



The Cutter is a multi-functional soluble oil based fluid designed for most machining and/or grinding operations. The Cutter contains superior corrosion inhibitors to protect galvanized parts, steel, aluminum, brass, copper and their alloys.

Extends Tool Life/Improves Surface Finish: The stable chlorine content of The Cutter provides outstanding tool life and surface finish on even the most difficult to machine alloys such as Stainless Steel, Hastelloy, Inconel, Titanium alloys and other space-age metals.

Controls Rancidity: The Cutter formulation contains odor-killing components to control odors and eliminate "Monday morning stink". Use of The Cutter controls rancidity problems which increases the life of the coolant.

Labor Saving/Economical:
The excellent emulsion stability and cleanliness of The Cutter means less down time and more production dollars per shift. Fewer pump-outs and less maintenance result in more man hours to produce parts.

Free Flowing Residue:
The Cutter leaves a non-sticky, free-flowing water re-emulsifiable residue on both machine and parts. No gummy, sticky, tacky build-up to tie up machines or aid bacterial growth.

Safe:
The Cutter does not contain phenols, creosols, nitrites, nitrates, harsh alkalies, phosphates or heavy metals. The Cutter is mild and non-irritating to the skin and operates like the pleasant aroma and blue green color of The Cutter.

Directions for Use:
A concentrate designed to be added to water, The Cutter forms a stable emulsion in a wide range of water temperatures and hardness.

1. **Always add The Cutter to water** in a separate container at the appropriate concentrations with as much agitation as possible. Water at room temperature forms the best emulsion. (Refer to Recommended Starting Concentration Chart.)
2. Add the mixed coolant to the cleaned sump.
3. **Makeup:** When adding makeup to the machine, add The Cutter at ½ to ⅔ the concentration desired in the machine. For example, startup of 10:1 requires 20:1 makeup. Always add diluted solution as makeup; never plain water.

RECOMMENDED STARTING CONCENTRATION
(parts water to parts The Cutter)

	DUCTILE IRON	BRASS ALLOYS	MILD STEEL	STAINLESS STEEL	HARD STEEL ALLOYS	ALUMINUM ALLOYS	COPPER ALLOYS
GENERAL TURNING	15-1	25-1	25-1	20-1	15 to 20-1	20 to 25-1	25-1
BORING	15-1	20-1	25-1	15-1	15-1	15-1	20-1
PLANING SPOT FACING	15-1	25-1	25-1	20-1	15 to 20-1	20-1	25-1
GENERAL MILLING	15-1	25-1	25-1	20-1	15 to 20-1	20-1	25-1
GENERAL DRILLING	10-1	10-1	15-1	10-1	10-1	10-1	10-1
TAPPING REAMING	10-1	10-1	10-1	10-1	10-1	10-1	10-1
GEAR CUTTING HOBBING	10-1	10-1	10-1	10-1	10-1	10-1	10-1
SCREW MACHINES	10-1	10-1	10-1	10-1	10-1	10-1	10-1
THREADING	10-1	10-1	10-1	10-1	10-1	10-1	10-1
SAWING	15-1	15-1	15 to 20-1	15-1	15-1	15-1	15-1
BROACHING	5 to 10-1	10-1	10-1	10-1	5 to 10-1	10-1	10-1
SURFACE GRINDING	30-1	30-1	30-1	20-1	20-1	30-1	30-1
OD & FINISH GRINDING	25-1	20-1	25-1	20-1	20-1	25-1	25-1
ID & CYLINDRICAL GRINDING	20-1	25-1	25-1	20-1	20-1	25-1	25-1

Spartan Chemical Co., Inc.
110 N. Westwood Ave.
Toledo, Ohio 43607

Formula for determining
Total **V**olume by **G**allons

$$\frac{\text{Width} \times \text{Length} \times \text{Height (in inches)}}{231} = \textbf{TVG}$$

Guarantee:

Spartan's modern manufacturing and laboratory control insure uniform quality. If dissatisfied with performance of product, any unused portion may be returned for credit. Use product as directed and read all precautionary statements.

THE CUTTER DILUTION RATIO VS. REFRACTIVE INDEX*

Dilution Ratio	Refractive Index
5-1	21.0
10-1	10.5
15-1	7.5
20-1	5.0
25-1	4.0
30-1	3.2
35-1	3.0
40-1	2.5
50-1	2.01

*A/O Instrument Model 10440 Industrial Fluid Tester

Specification Data:
Viscosity – 190 c.p.s. @ 24°C/75°F
Specific Gravity – 0.993 @ 24°C/75°F
pH (10% emulsion) – 10.2-10.4
Density @ 24°C/75°F – 8.3 lbs./gal.
Flash Point – Greater than 212°F (COC)
Miscibility – Forms an emulsion in water
Storage Stability –
a. Shelf @ 24°C/75°F – one year minimum
b. Accelerated @ 49°C/120°F – 60 days
c. Freeze/Thaw – Product will withstand three freeze/thaw cycles.

CAUTION: May cause eye irritation. This product is alkaline in nature. Contains petroleum oil. It should not be taken internally.
First Aid: Internal: If swallowed, give fruit juices or vinegar. Do not induce vomiting. Call a physician.
Eyes: Irrigate well with water. If irritated, call a physician. Keep away from children.

Packaging:
The Cutter is packaged in attractive 55-gallon drums and 5-gallon pails. Label copy is provided in both **English** and **Spanish.**

For Institutional and Industrial Use Only

10, 12 oz
pen

Almost a Gallon

ISSA MEMBER The Experts in Cleaning and Maintenance

Distributed by:

GATEWAY SUPPLY CO., INC.
[illegible] AVE.
CLINTON, [illegible] 319-242-7160

SPARTAN CHEMICAL CO., INC.
MATERIAL SAFETY DATA SHEET

SECTION I
PRODUCT IDENTIFICATION

PRODUCT NAME OR NUMBER (as it appears on label)
THE CUTTER

MANUFACTURER'S NAME
Spartan Chemical Co., Inc.

EMERGENCY TELEPHONE NO.
(419) 531-5551

ADDRESS (NUMBER, STREET, CITY, STATE AND ZIP CODE)
110 N. Westwood Ave., Toledo, OH 43607

MANUFACTURER'S D-U-N-S NO.
00-503-6728

HAZARDOUS MATERIAL DESCRIPTION, PROPER SHIPPING NAME, HAZARD CLASS, HAZARD ID NO. (49 CFR 172.101)
Unrestricted

ADDITIONAL HAZARD CLASSES (AS APPLICABLE)
n/a

CHEMICAL FAMILY
n/a

FORMULA
n/a

SECTION II - HAZARDOUS INGREDIENTS

CAS REGISTRY NO.	%W	CHEMICAL NAME(S)	TLV	LISTED AS A CARCINOGEN IN NTP, IARC OR OSHA 1910(Z) (SPECIFY)

NO HAZARDOUS INGREDIENTS

SECTION III - PHYSICAL DATA

BOILING POINT
In excess of 300 °F ____ °C

SPECIFIC GRAVITY (H_2O = 1)
0.99

VAPOR PRESSURE - Unknown
@____ °F ____ °C ____ mm Hg ____ psi

PERCENT SOLID BY WEIGHT (%)
80-85

VAPOR DENSITY (AIR = 1)
Unknown

EVAPORATION RATE (but. ace. = 1)
<1

SOLUBILITY IN WATER
Forms an emulsion

APPEARANCE AND ODOR
Transparent green oil

pH
10.2-10.4 (10% emulsion)

IS MATERIAL: (LIQUID) SOLID GAS PASTE POWDER

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT
Greater than 230 °F - °C

METHOD USED - ASTM - D92

FLAMMABLE LIMITS
Not established

LEL

UEL

EXTINGUISHING MEDIA
Foam, dry chemical, CO_2, water fog or spray

SPECIAL FIRE FIGHTING PROCEDURES
Use air supplied breathing equipment for enclosed areas. Avoid breathing vapor or fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS
Do not mix or store with strong oxidants like liquid chlorine or concentrated oxygen.

SECTION V - HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE - CONDITIONS TO AVOID
Concentrate may cause eye or skin irritation

THRESHOLD LIMIT VALUE - Not established

PRIMARY ROUTES OF ENTRY INHALATION ____ SKIN CONTACT __x__ OTHER (SPECIFY)

CONDITIONS AGGRAVATED BY USE - Unknown

EMERGENCY AND FIRST AID PROCEDURES - If swallowed do not induce vomiting. Call a physician. In case of eye contact, irrigate well with water for at least 15 minutes. If irritated, call physician. In case of skin contact (with concentrate) flush well with water.

SECTION VI - REACTIVITY DATA

STABILITY: UNSTABLE ____ CONDITIONS TO AVOID
STABLE __x__

INCOMPATIBILITY (MATERIALS TO AVOID)
Strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS
CO, CO_2, sulfur oxides if burned

HAZARDOUS POLYMERIZATION: MAY OCCUR ____ WILL NOT OCCUR __x__ CONDITIONS TO AVOID

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
Recover free liquid. Add an oil absorbent. Keep petroleum products out of sewers and waterways.

WASTE DISPOSAL METHOD
Assure conformity with applicable disposal regulations. Dispose of absorbed material at an approved waste disposal site or facility.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE)
Not required unless burned

VENTILATION: LOCAL EXHAUST (SPECIFY RATE) - X SPECIAL
MECHANICAL (GENERAL) (SPECIFY RATE) OTHER

PROTECTIVE GLOVES (SPECIFY TYPE)
Not necessary

EYE PROTECTION (SPECIFY TYPE)
Approved safety glasses

OTHER PROTECTIVE EQUIPMENT
None

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Do not store near strong oxidants

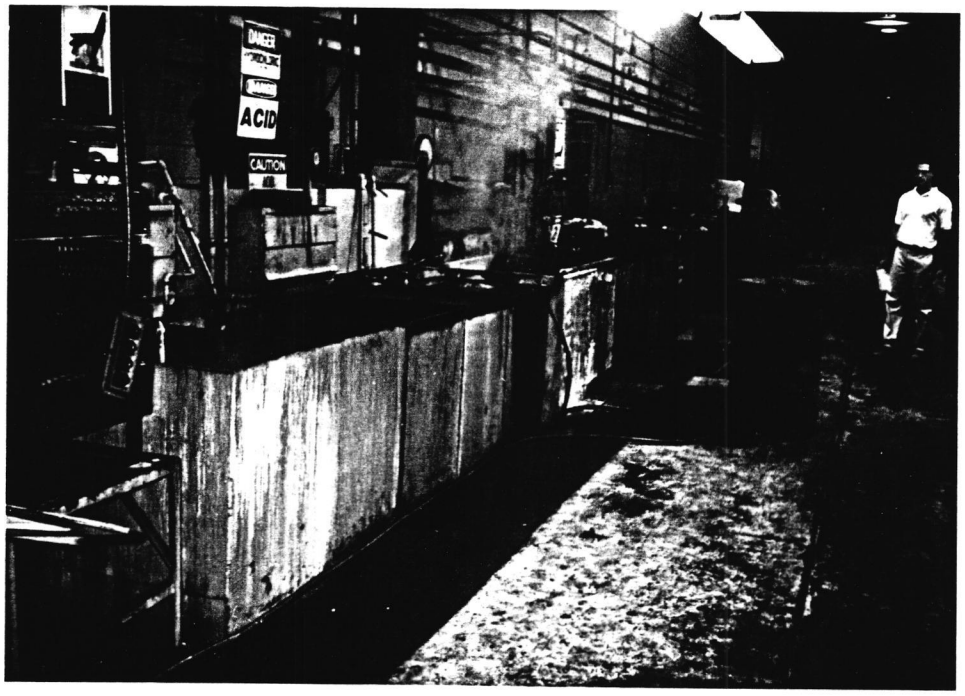
OTHER PRECAUTIONS
None

Spartan Chemical Co., Inc.
The Cutter
Ref: 29 CFR 1910:1200 (OSHA)

NAME Thomas J. Mitchell
TITLE Assistant Vice President, Research
DATE September 13, 1985

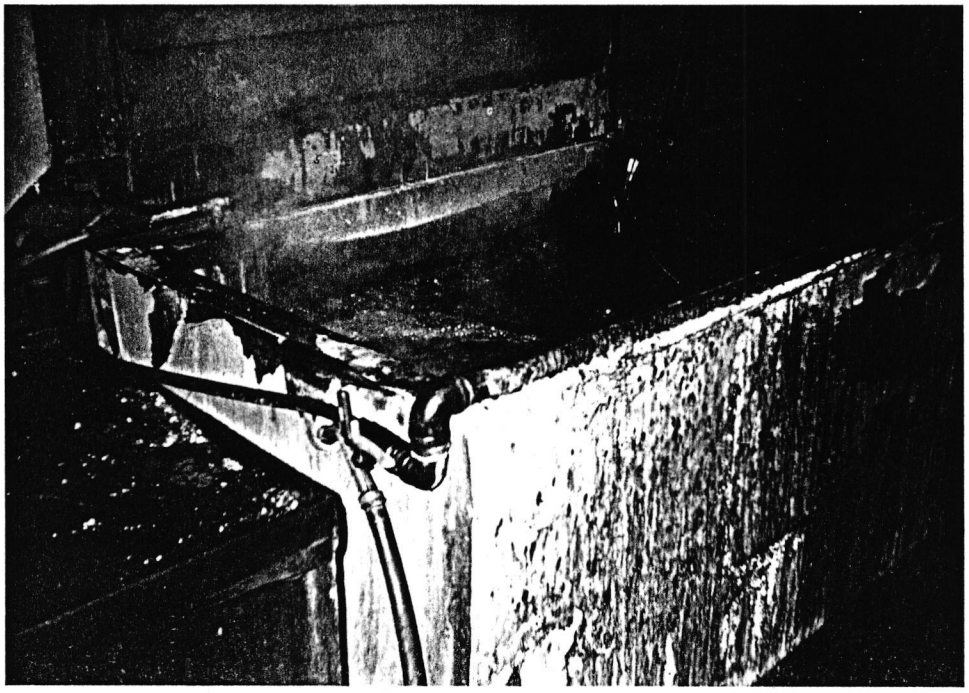
ATTACHMENT 5
PHOTOGRAPHS

Roll 1 Photograph 1



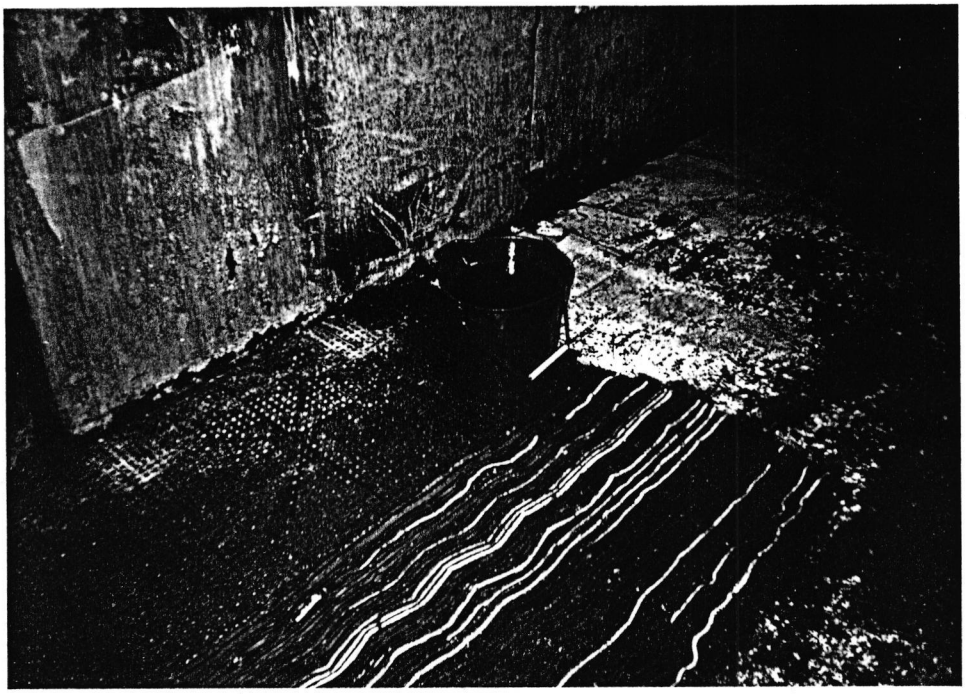
FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1100
SUBJECT OF PHOTO:	Black oxide treatment tanks (Facing East)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 2



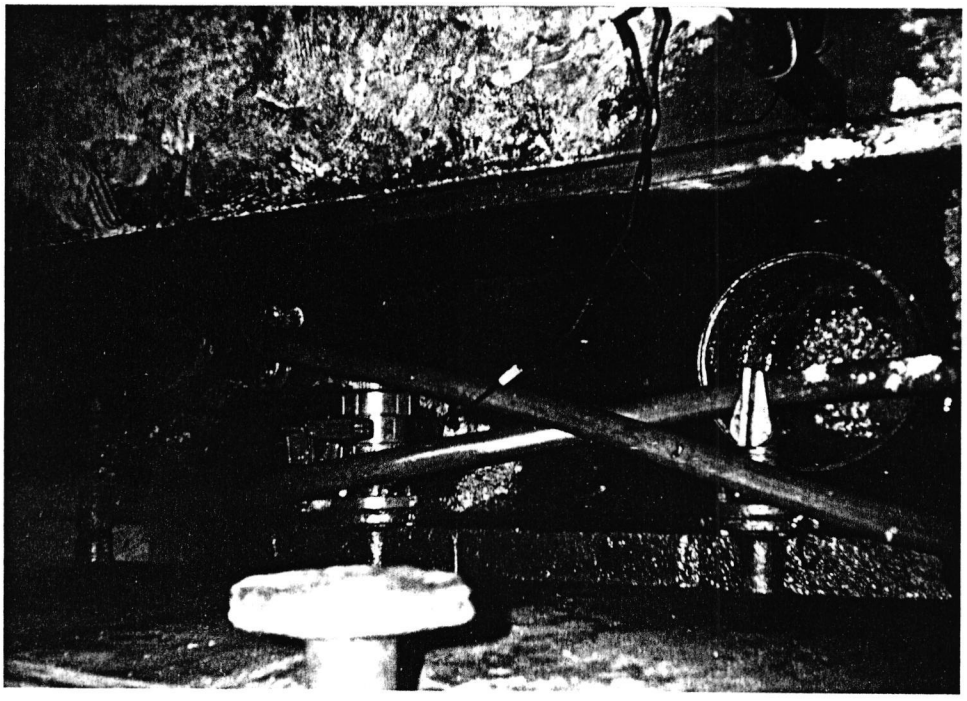
FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 7, 1989
TIME:	1105
SUBJECT OF PHOTO:	Tank containing the black oxide (Facing East)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 3



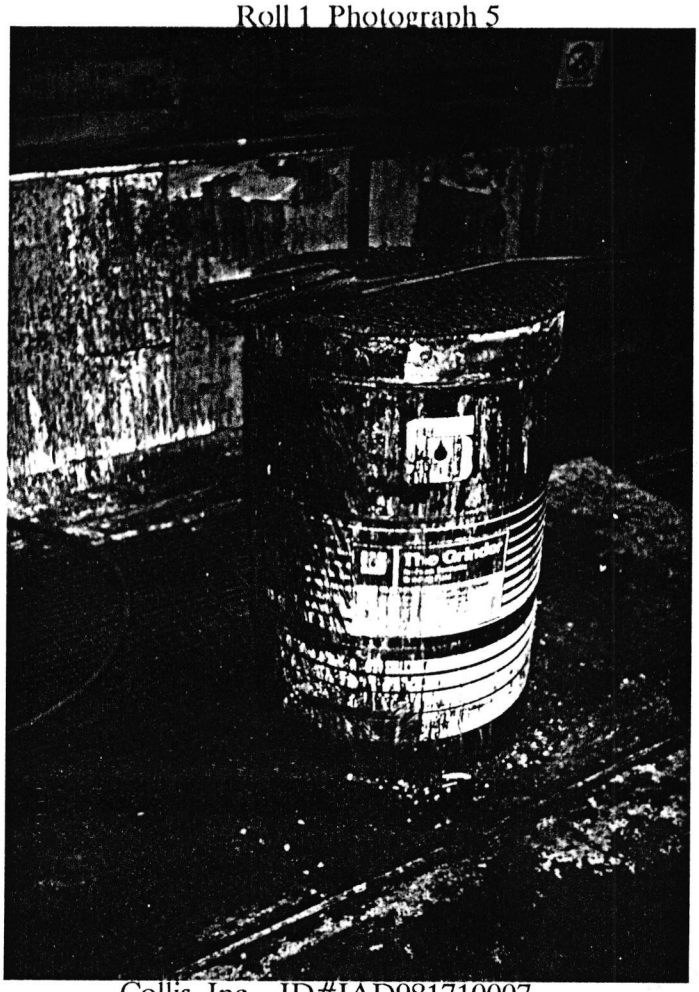
FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1110
SUBJECT OF PHOTO:	Bucket containing rust-ex (Facing South)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 4



FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1115
SUBJECT OF PHOTO:	Basin behind treatment tanks. Used to catch rinse water overflow (Facing North)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 5



FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1120
SUBJECT OF PHOTO:	55-gallon drum where black oxide sludge is accumulated (Facing East)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

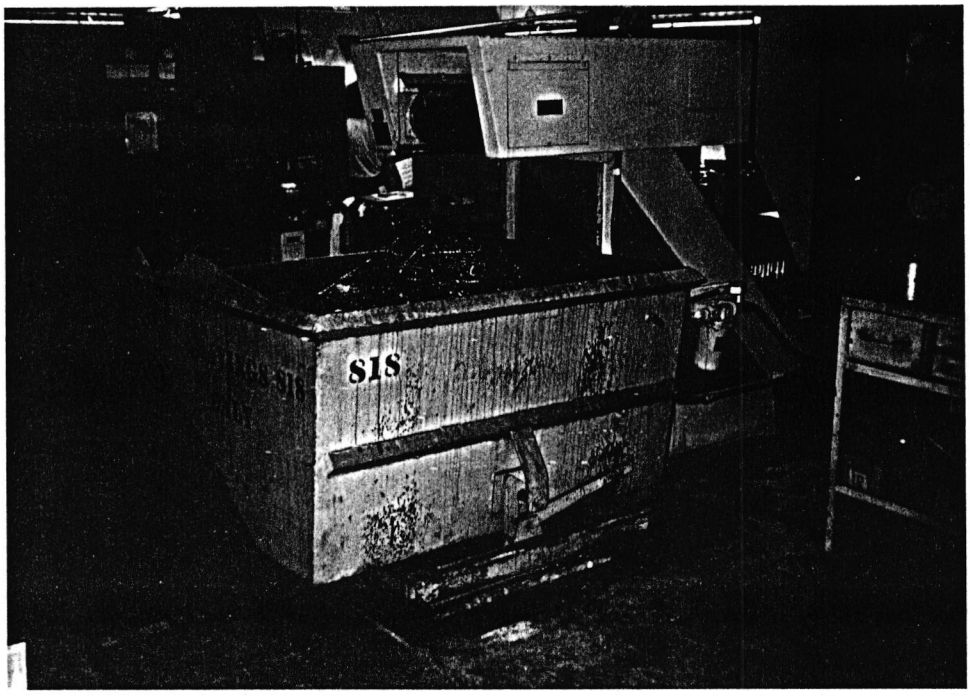
Roll 1 Photograph 6

FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1125
SUBJECT OF PHOTO:	Storage area for 55-gallon drum containing caustic soda, muriatic acid, and oil (Facing East)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 7

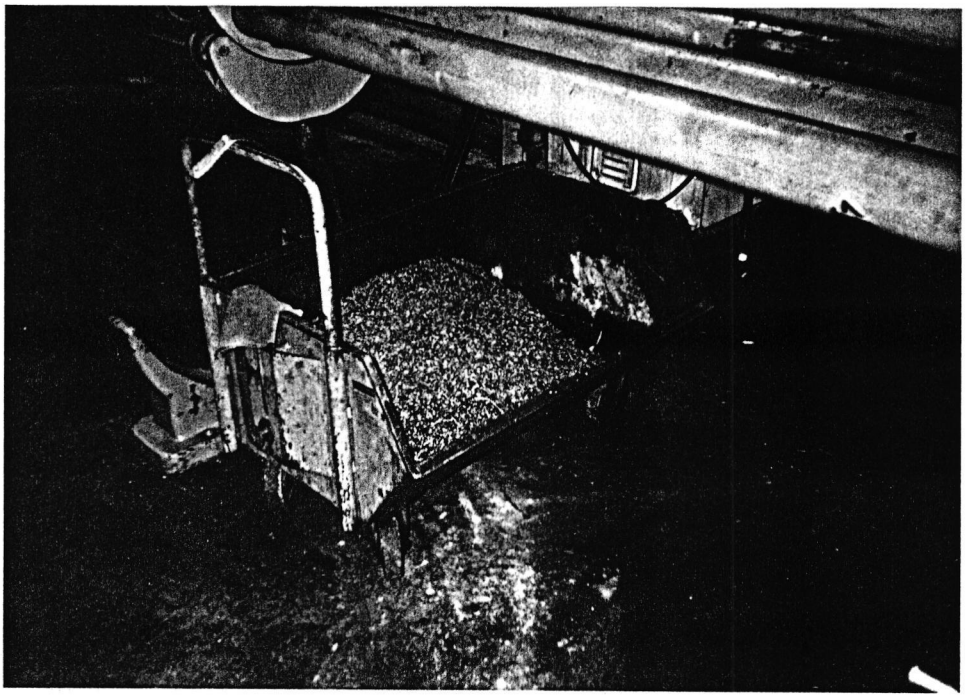
FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1130
SUBJECT OF PHOTO:	Storage area for 55-gallon drum containing caustic soda, muriatic acid, and oil (Facing West)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 8



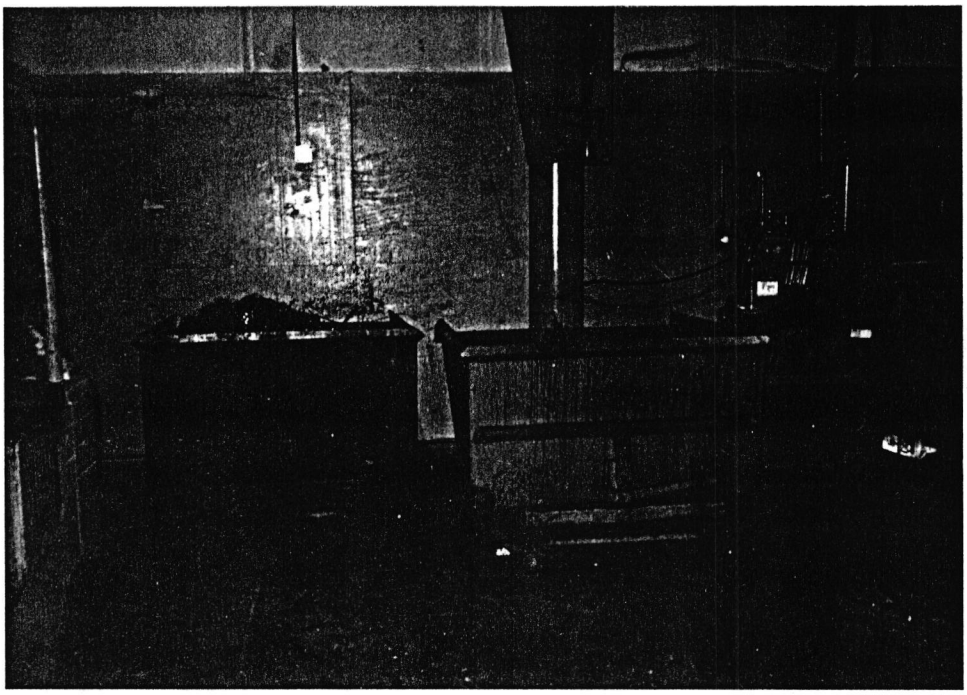
FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1135
SUBJECT OF PHOTO:	One of 6 hoppers where shavings are collected from boring machines (Facing West)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 9



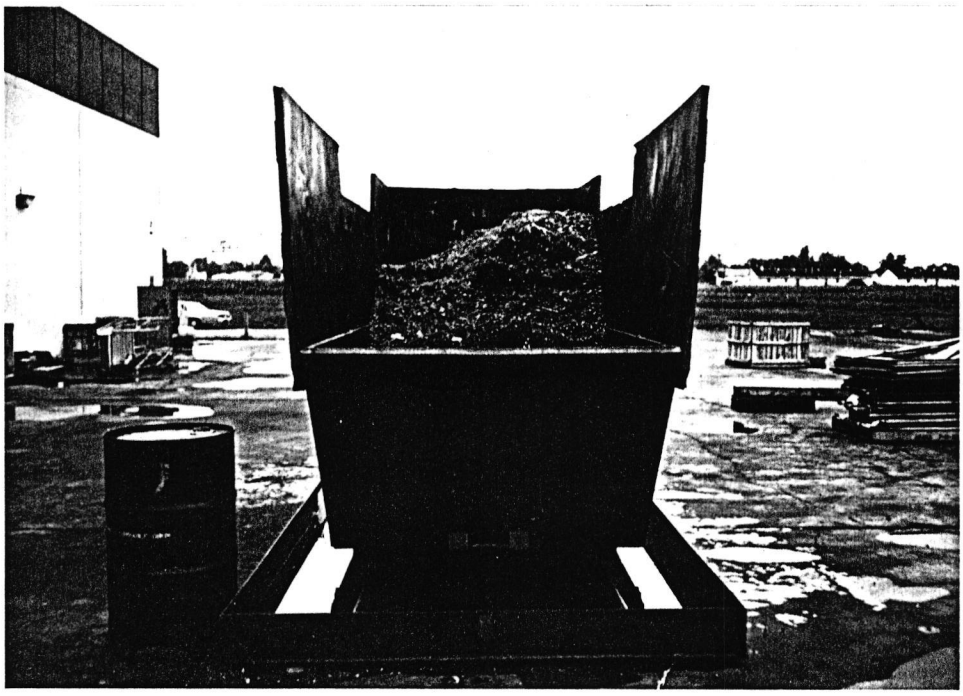
FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1140
SUBJECT OF PHOTO:	One of the small hoppers where shavings from the nut machines are collected (Facing West)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 10



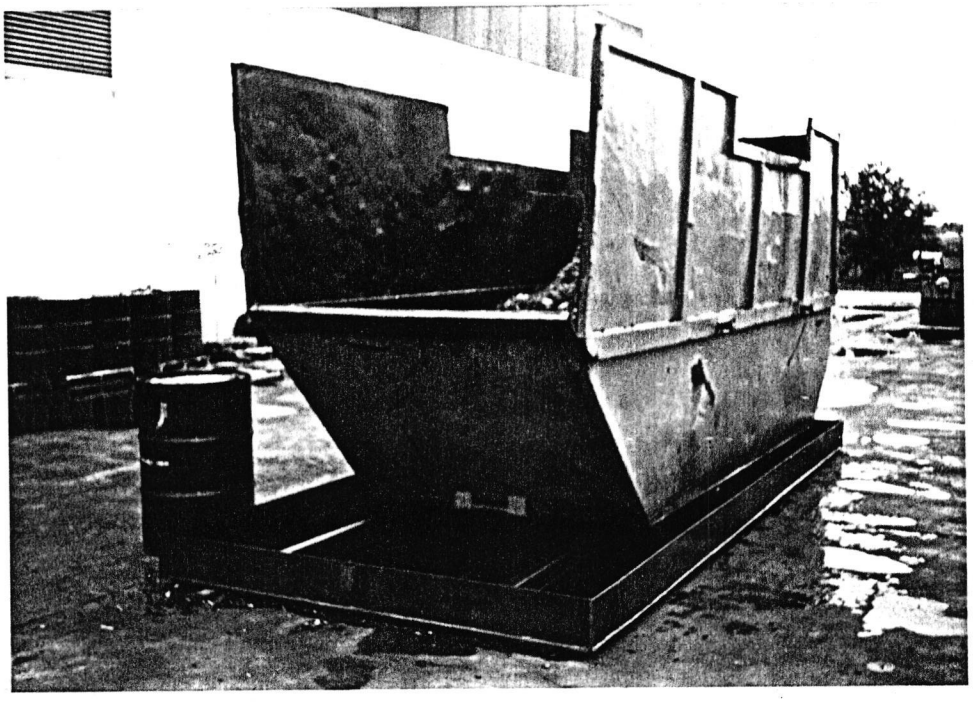
FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1145
SUBJECT OF PHOTO:	Two large hoppers where shavings from the small hoppers are dumped before being placed in storage in the rear of the building (Facing East)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 11



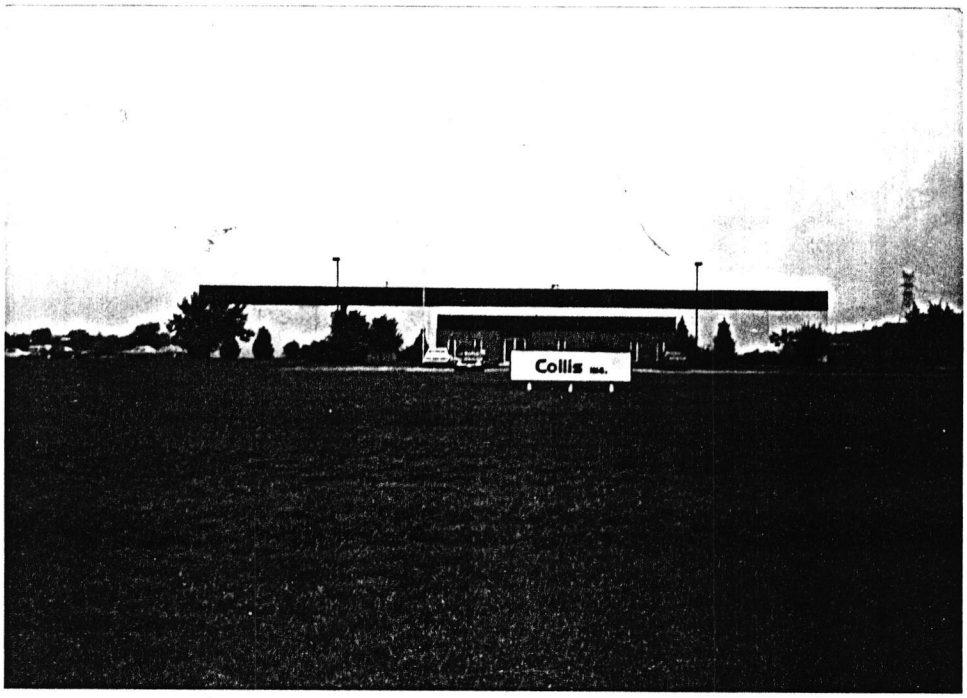
FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1150
SUBJECT OF PHOTO:	Dumpster where metal shavings and scrap are stored before collection by Turner Iron and Metal (Facing East)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 12



FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1155
SUBJECT OF PHOTO:	Dumpster where metal shavings and scrap are stored before collection by Turner Iron and Metal (Facing East)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100

Roll 1 Photograph 13



FACILITY:	Collis, Inc. - ID#IAD981710007
LOCATION:	Camanche, Iowa
DATE:	September 6, 1989
TIME:	1200
SUBJECT OF PHOTO:	Collis, Inc. facility (Facing South)
PHOTOGRAPHER:	John Bryan
WITNESS:	James Myers
CAMERA TYPE:	35mm (Automatic)
FILM TYPE:	ASA100